G 12

```
            JJJ     OOOOOOOOO     BBBBBBBBBBBB        CCCCCCCCCCCC  TTTTTTTTTTTTTTT  LLL
            JJJ     OOOOOOOOO     BBBBBBBBBBBB        CCCCCCCCCCCC  TTTTTTTTTTTTTTT  LLL
            JJJ     OOOOOOOOO     BBBBBBBBBBBB        CCCCCCCCCCCC  TTTTTTTTTTTTTTT  LLL
            JJJ  OOO         OOO  BBB         BBB  CCC                    TTT        LLL
            JJJ  OOO         OOO  BBB         BBB  CCC                    TTT        LLL
            JJJ  OOO         OOO  BBB         BBB  CCC                    TTT        LLL
            JJJ  OOO         OOO  BBB         BBB  CCC                    TTT        LLL
            JJJ  OOO         OOO  BBB         BBB  CCC                    TTT        LLL
            JJJ  OOO         OOO  BBB         BBB  CCC                    TTT        LLL
            JJJ  OOO         OOO  BBBBBBBBBBBB     CCC                    TTT        LLL
            JJJ  OOO         OOO  BBBBBBBBBBBB     CCC                    TTT        LLL
            JJJ  OOO         OOO  BBBBBBBBBBBB     CCC                    TTT        LLL
JJJ         JJJ  OOO         OOO  BBB         BBB  CCC                    TTT        LLL
JJJ         JJJ  OOO         OOO  BBB         BBB  CCC                    TTT        LLL
JJJ         JJJ  OOO         OOO  BBB         BBB  CCC                    TTT        LLL
JJJ         JJJ  OOO         OOO  BBB         BBB  CCC                    TTT        LLL
JJJ         JJJ  OOO         OOO  BBB         BBB  CCC                    TTT        LLL
JJJ         JJJ  OOO         OOO  BBB         BBB  CCC                    TTT        LLL
   JJJJJJJJJ        OOOOOOOOO     BBBBBBBBBBBB        CCCCCCCCCCCC        TTT        LLLLLLLLLLLLLLL
   JJJJJJJJJ        OOOOOOOOO     BBBBBBBBBBBB        CCCCCCCCCCCC        TTT        LLLLLLLLLLLLLLL
   JJJJJJJJJ        OOOOOOOOO     BBBBBBBBBBBB        CCCCCCCCCCCC        TTT        LLLLLLLLLLLLLLL
```

```
_$2

Val
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```
**FILE**ID**SYMBIONT                                  E 10




  SSSSSSSS  YY      YY  MM      MM  BBBBBBBB    IIIIII      OOOOOO    NN      NN  TTTTTTTTTT
  SSSSSSSS  YY      YY  MM      MM  BBBBBBBB    IIIIII      OOOOOO    NN      NN  TTTTTTTTTT
SS          YY      YY  MMMM  MMMM  BB      BB    II      OO      OO  NN      NN      TT
SS          YY      YY  MMMM  MMMM  BB      BB    II      OO      OO  NN      NN      TT
SS            YY  YY    MM  MM  MM  BB      BB    II      OO      OO  NNNN    NN      TT
SS            YY  YY    MM  MM  MM  BB      BB    II      OO      OO  NNNN    NN      TT
  SSSSSS        YY      MM      MM  BBBBBBBB      II      OO      OO  NN  NN  NN      TT
  SSSSSS        YY      MM      MM  BBBBBBBB      II      OO      OO  NN  NN  NN      TT
        SS      YY      MM      MM  BB      BB    II      OO      OO  NN    NNNN      TT
        SS      YY      MM      MM  BB      BB    II      OO      OO  NN    NNNN      TT
        SS      YY      MM      MM  BB      BB    II      OO      OO  NN      NN      TT
        SS      YY      MM      MM  BB      BB    II      OO      OO  NN      NN      TT          ....
SSSSSSSS        YY      MM      MM  BBBBBBBB    IIIIII      OOOOOO    NN      NN      TT          ....
SSSSSSSS        YY      MM      MM  BBBBBBBB    IIIIII      OOOOOO    NN      NN      TT          ....
                                                                                                  ....

LL          IIIIII      SSSSSSSS
LL          IIIIII      SSSSSSSS
LL            II      SS
LL            II      SS
LL            II      SS
LL            II      SS
LL            II        SSSSSS
LL            II        SSSSSS
LL            II              SS
LL            II              SS
LL            II              SS
LL            II              SS
LLLLLLLLLL  IIIIII    SSSSSSSS
LLLLLLLLLL  IIIIII    SSSSSSSS
```

```
0 MODULE SYMBIONT (%TITLE 'Symbiont communication'
0                 IDENT = 'V04-000'
0                 ) =
1 BEGIN
1
1 !****************************************************************************
1 !*                                                                          *
1 !*  COPYRIGHT (c) 1978, 1980, 1982, 1984 BY                                 *
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1 !*  AND  SHOULD  NOT  BE  CONSTRUED AS  A COMMITMENT BY DIGITAL EQUIPMENT   *
1 !*  CORPORATION.                                                            *
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1 !*  SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL.                 *
1 !*                                                                          *
1 !*                                                                          *
1 !****************************************************************************
1
1 !++
1 ! FACILITY:
1 !       Job controller.
1 !
1 ! ABSTRACT:
1 !       This module contains the routines that communicate with symbionts.
1 !
1 ! ENVIRONMENT:
1 !       VAX/VMS user and kernel mode.
1 !--
1 !
1 ! AUTHOR: M. Jack, CREATION DATE: 16-Feb-1982
1 !
1 ! MODIFIED BY:
1 !
1 !       V03-016 JAK0232         J A Krycka      31-Aug-1984
1 !               Ensure that the display of the error message associated with
1 !               a symbiont deletion error message is not inhibited.
1 !
1 !       V03-015 JAK0228         J A Krycka      30-Aug-1984
1 !               Temporarily disable the pausing of a output queue upon
1 !               processing an operator request message.
1 !
1 !       V03-014 JAK0220         J A Krycka      18-Jul-1984
1 !               Support SJC$_PAGINATE at the queue level in addition to the
1 !               job and file levels.
1 !
1 !       V03-013 JAK0219         J A Krycka      17-Jul-1984
1 !               Track changes in JOBCTLDEF.REQ.
```

```
1 !
1 !       V03-012 JAK0206         J A Krycka      06-May-1984
1 !               Conditonally request image dump for symbiont process.
1 !
1 !       V03-011 GRR0011         Gregory R. Robert       19-Apr-1984
1 !               Enable image dump for symbiont process.
1 !
1 !       V03-010 JAK0200         J A Krycka      15-Mar-1984
1 !               Add IO$M_NORSWAIT function modifier to mailbox write.
1 !
1 !       V03-009 GRR0008         Gregory R. Robert       26-Sep-1983
1 !               Remove GRR0005 (LIB is already refereced in JOBCTLDEF).
1 !
1 !       V03-008 GRR0005         Gregory R. Robert       26-Sep-1983
1 !               Fetch symbiont definitions directly from LIB.
1 !
1 !       V03-007 MLJ0118         Martin L. Jack, 23-Aug-1983
1 !               Change field names, track symbiont changes.
1 !
1 !       V03-006 MLJ0115         Martin L. Jack, 30-Jul-1983
1 !               Changes for job controller baselevel.
1 !
1 !       V03-005 MLJ0114         Martin L. Jack, 23-Jun-1983
1 !               Changes for job controller baselevel.
1 !
1 !       V03-004 MLJ0113         Martin L. Jack, 26-May-1983
1 !               Changes for job controller baselevel.
1 !
1 !       V03-003 MLJ0112         Martin L. Jack, 29-Apr-1983
1 !               Changes for job controller and print symbiont baselevel.
1 !
1 !       V03-002 MLJ0110         Martin L. Jack, 18-Apr-1983
1 !               Correct failure to set stopped state in STOP_SYMBIONT_STREAM.
1 !
1 !       V03-001 MLJ0109         Martin L. Jack, 14-Apr-1983
1 !               Changes for job controller baselevel.
1 !
1 !**
```

```
1 REQUIRE 'SRC$:JOBCTLDEF';                     ! Job controller definitions
1
1
1 FORWARD ROUTINE
1         OPERATOR_REQUEST_ACTION,
1         OPERATOR_REQUEST:                     NOVALUE,
1         SEND_SYMBIONT_MESSAGE:                NOVALUE,
1         START_SYMBIONT_TASK:                  NOVALUE,
1         STOP_SYMBIONT_TASK:                   NOVALUE,
1         PAUSE_SYMBIONT_TASK:                  NOVALUE,
1         RESUME_SYMBIONT_TASK:                 NOVALUE,
1         START_SYMBIONT_STREAM,
1         STOP_SYMBIONT_STREAM:                 NOVALUE,
1         RESET_SYMBIONT_STREAM:                NOVALUE,
1         PROCESS_SYMBIONT_MESSAGE:             NOVALUE,
1         SYMBIONT_SERVICE:                     NOVALUE,
1         SYMBIONT_DELETION:                    NOVALUE,
1         DELETE_SYMBIONTS:                     NOVALUE,
1         SYMBIONT_COMPLETED_BLOCKS;
1
1
1 EXTERNAL ROUTINE
1         ALLOCATE_MEMORY,
1         COMPLETE_JOB:                         NOVALUE,
1         DEALLOCATE_MEMORY:                    NOVALUE,
1         DEALLOCATE_VARIABLE_DATA:             NOVALUE,
1         ENQUEUE_JOB:                          L_OUTPUT_2 NOVALUE,
1         ENTER_PROCESS_DATA:                   NOVALUE,
1         FETCH_VARIABLE_DATA:                  NOVALUE,
1         FETCH_VARIABLE_ITEM,
1         FETCH_VARIABLE_ITEM_LIST,
1         FIND_PENDING_JOBS:                    NOVALUE,
1         LOCK_QUEUE_FILE:                      NOVALUE,
1         READ_RECORD,
1         RELEASE_RECORD:                       NOVALUE,
1         REWRITE_RECORD:                       NOVALUE,
1         SCAN_INCOMPLETE_SERVICES:             NOVALUE,
1         STORE_VARIABLE_DATA,
1         UNLOCK_QUEUE_FILE:                    NOVALUE,
1         UPDATE_GETQUI_DATA:                   NOVALUE;
1
1
1 EXTERNAL
1         JOBCTLMBX_DESC,
1         NLA0_DESC,
1         OPA0_DESC;
1
1
1 ! Symbiont control table.
1 !
1 MACRO
1         SCT_L_FLINK=              0,0,32,0 %,     ! Link to next SCT
1         SCT_V_DELETING=           4,0,1,0 %,      ! Symbiont is deleting itself
1         SCT_B_MAXSTREAMS=         5,0,8,0 %,      ! Maximum active streams
1         SCT_W_MAILBOX=            6,0,16,0 %,     ! Unit number of mailbox
1         SCT_L_PID=                8,0,32,0 %,     ! PID of symbiont process
1         SCT_L_BITMAP=             12,0,32,0 %,    ! Stream index allocation bitmap
```

```
1            SCT_L_RESETTING=       16,0,32,0 %,     ! Stream resetting bitmap
1            SCT_T_PROCESSOR=       20,0,0,0 %,      ! Image filename (ASCIC)
1            SCT_L_QUEUES=          60,0,0,0 %;      ! Base of 32 SMQ pointers
1
1
1 LITERAL
1            SCT_K_MAXSTREAMS=      32;              ! Maximum active streams
1
1
1 BUILTIN
1            FFC,
1            MOVC3,
1            TESTBITSC;
```

```
1 ROUTINE OPERATOR_REQUEST_ACTION(MSG_DESC)=
1
1 !++
1 !
1 ! FUNCTIONAL DESCRIPTION:
1 !       This is an action routine for the $PUTMSG that issues an operator
1 !       request to the printer operator.  It writes the record to the operator
1 !       via OPCOM or via broadcast.
1 !
1 ! INPUT PARAMETERS:
1 !       MSG_DESC        - Descriptor for message.
1 !
1 ! IMPLICIT INPUTS:
1 !       NONE
1 !
1 ! OUTPUT PARAMETERS:
1 !       NONE
1 !
1 ! IMPLICIT OUTPUTS:
1 !       NONE
1 !
1 ! ROUTINE VALUE:
1 !       FALSE, to signal $PUTMSG not to write the message.
1 !
1 ! SIDE EFFECTS:
1 !       NONE
1 !
1 !--
1
2 BEGIN
2 MAP
2       MSG_DESC:       REF BBLOCK;     ! Descriptor for message text
2 LOCAL
2       LENGTH:         WORD,           ! Length of message, minimized
2       OPC_BUFFER:     BBLOCK[$BYTEOFFSET(OPC$L_MS_TEXT) + 512],
2                                       ! Buffer for OPCOM message
2       OPC_DESC:       VECTOR[2],      ! Descriptor for message buffer
2       STATUS;                         ! Status return
2
2
2 ! Set up the OPCOM message buffer.
2 !
2 OPC_BUFFER[OPC$B_MS_TYPE] = OPC$_RQ_RQST;
2 OPC_BUFFER[OPC$B_MS_TARGET] = OPC$M_NM_PRINT;
2 OPC_BUFFER[OPC$W_MS_STATUS] = 0;
2 OPC_BUFFER[OPC$L_MS_RQSTID] = 0;
2 LENGTH = .MSG_DESC[DSC$W_LENGTH];
2 IF .LENGTH GTRU 512 THEN LENGTH = 512;
2 CH$MOVE(.LENGTH, .MSG_DESC[DSC$A_POINTER], OPC_BUFFER[OPC$L_MS_TEXT]);
2 OPC_DESC[0] = $BYTEOFFSET(OPC$L_MS_TEXT) + .LENGTH;
2 OPC_DESC[1] = OPC_BUFFER;
2
2
2 ! Try to send the message by OPCOM.  If this fails, send a broadcast to the
2 ! system console.
2 !
2 STATUS = $SNDOPR(MSGBUF=OPC_DESC);
```

```
  2 IF NOT .STATUS OR .STATUS EQL OPC$_NOPERATOR
  2 THEN
P 2     $BRKTHRU(
P 2         MSGBUF=.MSG_DESC,
P 2         SENDTO=OPA0_DESC,
P 2         SNDTYP=BRK$C_DEVICE,
  2         TIMOUT=10);
  2
  2
  2 ! Return FALSE, to signal $PUTMSG not to write the message.
  2 !
  2 FALSE
  1 END;
```

```
                              .TITLE  SYMBIONT Symbiont communication
                              .IDENT  \V04-000\

                              .PSECT  COMMON,NOEXE,  OVR,2

        00000 DIAG_STORAGE_BASE:
                              .BLKB   0
        00000 DIAG_TRACE:
                              .BLKB   96
        00060 DIAG_COUNT:
                              .BLKB   96
        000C0 DIAG_FLAGS:
                              .BLKB   4
        000C4 WORK_AREA:
                              .BLKB   44
        000F0 SNDJBC_COUNT:
                              .BLKB   132
        00174 GETQUI_COUNT:
                              .BLKB   40
        0019C SNDACC_COUNT:
                              .BLKB   28
        001B8 SNDSMB_COUNT:
                              .BLKB   72
        00200 DIAG_STORAGE_END:
                              .BLKB   0
        00200 FLAGS:          .BLKB   4
        00204 IMAGE_DUMP_STSFLG:
                              .BLKB   4
        00208 THIS_SYSID:
                              .BLKB   6
        0020E                 .BLKB   2
        00210 CUR_TIME:
                              .BLKB   8
        00218 HOURLY_TIME:
                              .BLKB   8
        00220 HOURLY_PARAMS:
                              .BLKB   20
        00234 SYMBIONT_COUNT:
                              .BLKB   4
        00238 QUEUE_REFERENCE_COUNT:
                              .BLKB   4
        0023C MBX_MESSAGE_COUNT:
```

```
                   .BLKB   4
00240 MBX:         .BLKB   4
00244 MBX_END:.BLKB   4
00248 MEMORY_FREE_QUEUES:
                   .BLKB   40
00270 NONAST_WORK_QUEUE:
                   .BLKB   8
00278 BCB_FREE_LIST:
                   .BLKB   4
0027C BCB_ACTIVE_LIST:
                   .BLKB   4
00280 GQL_FREE_LIST:
                   .BLKB   4
00284 GQL_ACTIVE_LIST:
                   .BLKB   4
00288 OPEN_GETQUI_LIST:
                   .BLKB   4
0028C PROCESS_DATA_LIST:
                   .BLKB   4
00290 SYMBIONT_CONTROL:
                   .BLKB   4
00294 SPARE_AREA:
                   .BLKB   12
002A0 REMOTE_REQUEST_LKSB:
                   .BLKB   8
002A8 QUEUE_FILE_LKSB:
                   .BLKB   8
002B0 QUEUE_LOCK_LKSB:
                   .BLKB   8
002B8 RSP:         .BLKB   8
002C0 JBC_PRIORITY:
                   .BLKB   4
002C4 JBC_PRIVILEGES:
                   .BLKB   8
002CC JBC_QUOTAS:
                   .BLKB   66
0030E              .BLKB   2
00310 JBC_UIC:.BLKB   4
00314 QUEUE_FAB:
                   .BLKB   80
00364 QUEUE_RAB:
                   .BLKB   68
003A8 QUEUE_NAM:
                   .BLKB   96
00408 QUEUE_XAB:
                   .BLKB   88
00460 QUEUE_RSA:
                   .BLKB   255
0055F              .BLKB   1
00560 QUEUE_ALQ:
                   .BLKB   4
00564 QUEUE_MBF:
                   .BLKB   1
00565              .BLKB   3
00568 ACCOUNTING_FABS:
                   .BLKB   8
00570 ACCOUNTING_RABS:
```

```
                      .BLKB   8
00578 ACCOUNT_FAB_A:
                      .BLKB   80
005C8 ACCOUNT_RAB_A:
                      .BLKB   68
0060C ACCOUNT_NAM_A:
                      .BLKB   96
0066C ACCOUNT_RSA_A:
                      .BLKB   255
0076B                 .BLKB   1
0076C ACCOUNT_FAB_B:
                      .BLKB   80
007BC ACCOUNT_RAB_B:
                      .BLKB   68
00800 ACCOUNT_NAM_B:
                      .BLKB   96
00860 ACCOUNT_RSA_B:
                      .BLKB   255
0095F                 .BLKB   1
00960 DIAG_FAB:
                      .BLKB   80
009B0 DIAG_RAB:
                      .BLKB   68
009F4 MBX_CHAN:
                      .BLKB   4
009F8 MBX_IOSB:
                      .BLKB   8
00A00 MBX_BUFFER:
                      .BLKB   1024
00E00 VALUE_STORAGE_BASE:
                      .BLKB   0
00E00 ITEM_PRESENT:
                      .BLKB   32
00E20 VALUE_GETQUI_BASE:
                      .BLKB   0
00E20 VALUE_ACCOUNTING_MESSAGE:
                      .BLKB   6
00E26 VALUE_ACCOUNTING_TYPES:
                      .BLKB   4
00E2A VALUE_AFTER_TIME:
                      .BLKB   8
00E32 VALUE_ALIGNMENT_PAGES:
                      .BLKB   1
00E33 VALUE_BASE_PRIORITY:
                      .BLKB   1
00E34 VALUE_BATCH_INPUT:
                      .BLKB   6
00E3A VALUE_BATCH_OUTPUT:
                      .BLKB   10
00E44 VALUE_BUFFER_COUNT:
                      .BLKB   1
00E45 VALUE_CHARACTERISTIC_NAME:
                      .BLKB   6
00E4B VALUE_CHARACTERISTIC_NUMBER:
                      .BLKB   1
00E4C VALUE_CHARACTERISTICS:
                      .BLKB   16
```

```
00E5C VALUE_CHECKPOINT_DATA:
                .BLKB   6
00E62 VALUE_CLI:
                .BLKB   6
00E68 VALUE_CPU_DEFAULT:
                .BLKB   4
00E6C VALUE_CPU_LIMIT:
                .BLKB   4
00E70 VALUE_DESTINATION_QUEUE:
                .BLKB   8
00E78 VALUE_DEVICE_NAME:
                .BLKB   6
00E7E VALUE_ENTRY_NUMBER:
                .BLKB   4
00E82 VALUE_ENTRY_NUMBER_OUTPUT:
                .BLKB   10
00E8C VALUE_EXTEND_QUANTITY:
                .BLKB   2
00E8E VALUE_FILE_COPIES:
                .BLKB   1
00E8F VALUE_FILE_IDENTIFICATION:
                .BLKB   36
00EB3 VALUE_FILE_SETUP_MODULES:
                .BLKB   6
00EB9 VALUE_FILE_SPECIFICATION:
                .BLKB   6
00EBF VALUE_FIRST_PAGE:
                .BLKB   4
00EC3 VALUE_FORM_DESCRIPTION:
                .BLKB   6
00EC9 VALUE_FORM_LENGTH:
                .BLKB   1
00ECA VALUE_FORM_MARGIN_BOTTOM:
                .BLKB   1
00ECB VALUE_FORM_MARGIN_LEFT:
                .BLKB   2
00ECD VALUE_FORM_MARGIN_RIGHT:
                .BLKB   2
00ECF VALUE_FORM_MARGIN_TOP:
                .BLKB   1
00ED0 VALUE_FORM_NAME:
                .BLKB   6
00ED6 VALUE_FORM_NUMBER:
                .BLKB   4
00EDA VALUE_FORM:
                .BLKB   8
00EE2 VALUE_FORM_SETUP_MODULES:
                .BLKB   6
00EE8 VALUE_FORM_STOCK:
                .BLKB   6
00EEE VALUE_FORM_WIDTH:
                .BLKB   2
00EF0 VALUE_GENERIC_TARGET:
                .BLKB   996
012D4 VALUE_JOB_COPIES:
                .BLKB   1
012D5 VALUE_JOB_LIMIT:
```

```
                  .BLKB   1
01206 VALUE_JOB_NAME:
                  .BLKB   6
012DC VALUE_JOB_RESET_MODULES:
                  .BLKB   6
012E2 VALUE_JOB_SIZE_MAXIMUM:
                  .BLKB   4
012E6 VALUE_JOB_SIZE_MINIMUM:
                  .BLKB   4
012EA VALUE_JOB_STATUS_OUTPUT:
                  .BLKB   10
012F4 VALUE_LAST_PAGE:
                  .BLKB   4
012F8 VALUE_LIBRARY_SPECIFICATION:
                  .BLKB   6
012FE VALUE_LOG_QUEUE:
                  .BLKB   8
01306 VALUE_LOG_SPECIFICATION:
                  .BLKB   6
0130C VALUE_NOTE:
                  .BLKB   6
01312 VALUE_OPERATOR_REQUEST:
                  .BLKB   6
01318 VALUE_OWNER_UIC:
                  .BLKB   4
0131C VALUE_PAGE_SETUP_MODULES:
                  .BLKB   6
01322 VALUE_PARAMETER_1:
                  .BLKB   6
01328 VALUE_PARAMETER_2:
                  .BLKB   6
0132E VALUE_PARAMETER_3:
                  .BLKB   6
01334 VALUE_PARAMETER_4:
                  .BLKB   6
0133A VALUE_PARAMETER_5:
                  .BLKB   6
01340 VALUE_PARAMETER_6:
                  .BLKB   6
01346 VALUE_PARAMETER_7:
                  .BLKB   6
0134C VALUE_PARAMETER_8:
                  .BLKB   6
01352 VALUE_PRIORITY:
                  .BLKB   1
01353 VALUE_PROCESSOR:
                  .BLKB   6
01359 VALUE_PROTECTION:
                  .BLKB   4
0135D VALUE_QUEUE:
                  .BLKB   6
01363 VALUE_QUEUE_FILE_SPECIFICATION:
                  .BLKB   6
01369 VALUE_RELATIVE_PAGE:
                  .BLKB   4
0136D VALUE_RESERVED_INPUT_1:
                  .BLKB   1
```

```
                                  0136E VALUE_RESERVED_INPUT_2:
                                                .BLKB   2
                                  01370 VALUE_RESERVED_INPUT_3:
                                                .BLKB   4
                                  01374 VALUE_RESERVED_INPUT_4:
                                                .BLKB   6
                                  0137A VALUE_RESERVED_OUTPUT_1:
                                                .BLKB   10
                                  01384 VALUE_RESERVED_OUTPUT_2:
                                                .BLKB   10
                                  0138E VALUE_SEARCH_STRING:
                                                .BLKB   6
                                  01394 VALUE_SCSNODE_NAME:
                                                .BLKB   6
                                  0139A VALUE_WSDEFAULT:
                                                .BLKB   2
                                  0139C VALUE_WSEXTENT:
                                                .BLKB   2
                                  0139E VALUE_WSQUOTA:
                                                .BLKB   2
                                  013A0 VALUE_STORAGE_END:
                                                .BLKB   0

                                        JBC$_CLOSEOUT=          266328
                                        JBC$_NOCMKRNL=          272388
                                        JBC$_NOOPER=            272532
                                        JBC$_NOSYSNAM=          272404
                                        JBC$_OPENIN=            266392
                                        JBC$_OPENOUT=           266400
                                        JBC$_READERR=           266416
                                        JBC$_WRITEERR=          266448
                                                .EXTRN  ALLOCATE_MEMORY
                                                .EXTRN  COMPLETE_JOB, DEALLOCATE_MEMORY
                                                .EXTRN  DEALLOCATE_VARIABLE_DATA
                                                .EXTRN  ENQUEUE_JOB, ENTER_PROCESS_DATA
                                                .EXTRN  FETCH_VARIABLE_DATA
                                                .EXTRN  FETCH_VARIABLE_ITEM
                                                .EXTRN  FETCH_VARIABLE_ITEM_LIST
                                                .EXTRN  FIND_PENDING_JOBS
                                                .EXTRN  LOCK_QUEUE_FILE
                                                .EXTRN  READ_RECORD, RELEASE_RECORD
                                                .EXTRN  REWRITE_RECORD, SCAN_INCOMPLETE_SERVICES
                                                .EXTRN  STORE_VARIABLE_DATA
                                                .EXTRN  UNLOCK_QUEUE_FILE
                                                .EXTRN  UPDATE_GETQUI_DATA
                                                .EXTRN  JOBCTLMBX_DESC, NLA0_DESC
                                                .EXTRN  OPA0_DESC, SYS$SNDOPR
                                                .EXTRN  SYS$BRKTHRU

                                                .PSECT  CODE,NOWRT,2

                             00FC 00000 OPERATOR_REQUEST_ACTION:
                                                .WORD   Save R2,R3,R4,R5,R6,R7                    ; 1206
            5E      FDF0   CE   9E 00002        MOVAB   -528(SP), SP                              ;
      08    AE      0203   8F   3C 00007        MOVZWL  #515, OPC_BUFFER                          ; 1248
                      0C   AE   D4 0000D        CLRL    OPC_BUFFER+4                              ; 1251
            57        04   AC   D0 00010        MOVL    MSG_DESC, R7                              ; 1252
```

```
                          56              67  B0 00014          MOVW    (R7), LENGTH                                          ;
                  0200    8F              56  B1 00017          CMPW    LENGTH, #512                                          ; 1253
                          05              1B  0001C             BLEQU   1$                                                    ;
                          56      0200    8F  B0 0001E          MOVW    #512, LENGTH                                          ;
        10   AE     04    B7              56  28 00023 1$:      MOVC3   LENGTH, @4(R7), OPC_BUFFER+8                          ; 1254
                          6E              56  3C 00029          MOVZWL  LENGTH, OPC_DESC                                      ; 1255
                          6E              08  C0 0002C          ADDL2   #8, OPC_DESC                                          ;
                    04    AE        08    AE  9E 0002F          MOVAB   OPC_BUFFER, OPC_DESC+4                                ; 1256
                                          7E  D4 00034          CLRL    -(SP)                                                 ; 1262
                                    04    AE  9F 00036          PUSHAB  OPC_DESC                                              ;
             00000000G    00              02  FB 00039          CALLS   #2, SYS$SNDOPR                                        ;
                          09              50  E9 00040          BLBC    STATUS, 2$                                            ; 1263
             00058061     8F              50  D1 00043          CMPL    STATUS, #360545                                       ;
                                          1C  12 0004A          BNEQ    3$                                                    ;
                                          7E  7C 0004C 2$:      CLRQ    -(SP)                                                 ; 1269
                                          0A  DD 0004E          PUSHL   #10                                                   ;
                                          7E  7C 00050          CLRQ    -(SP)                                                 ;
                                          20  DD 00052          PUSHL   #32                                                   ;
                          7E              01  7D 00054          MOVQ    #1, -(SP)                                             ;
                              00000000G   EF  9F 00057          PUSHAB  OPA0_DESC                                             ;
                                          57  DD 0005D          PUSHL   R7                                                    ;
                                          7E  D4 0005F          CLRL    -(SP)                                                 ;
             00000000G    00              0B  FB 00061          CALLS   #11, SYS$BRKTHRU                                      ;
                                          50  D4 00068 3$:      CLRL    R0                                                    ; 1275
                                              04 0006A          RET                                                           ;

; Routine Size:  107 bytes,    Routine Base:  CODE + 0000
```

```
1 ROUTINE OPERATOR_REQUEST(SMQ,SJH): NOVALUE=
1
1 !++
1 !
1 ! FUNCTIONAL DESCRIPTION:
1 !       This routine formats and writes an operator request message to the
1 !       printer operator.
1 !
1 ! INPUT PARAMETERS:
1 !       SMQ                     - Pointer to SMQ.
1 !       SJH                     - Pointer to SJH.
1 !
1 ! IMPLICIT INPUTS:
1 !       NONE
1 !
1 ! OUTPUT PARAMETERS:
1 !       NONE
1 !
1 ! IMPLICIT OUTPUTS:
1 !       NONE
1 !
1 ! ROUTINE VALUE:
1 !       NONE
1 !
1 ! SIDE EFFECTS:
1 !       Message written to operator.
1 !
1 !--
1
2 BEGIN
2 MAP
2       SMQ:                    REF BBLOCK,     ! Pointer to SMQ
2       SJH:                    REF BBLOCK;     ! Pointer to SJH
2 LOCAL
2       MSGVEC:                 VECTOR[9],      ! $PUTMSG message vector
2       BUFFER:                 VECTOR[132,BYTE]; ! User's operator request text
2
2
2 ! Fetch the user's operator request message.
2 !
2 FETCH_VARIABLE_DATA(
2     SJH$S_OPERATOR_REQUEST, SJH[SJH$T_OPERATOR_REQUEST],
2     %ALLOCATION(BUFFER), BUFFER);
2
2
2 ! Format the $PUTMSG buffer.
2 !
2 MSGVEC[0] = 8;
2 MSGVEC[1] = JBC$_REQUEST;
2 MSGVEC[2] = 6;
2 MSGVEC[3] = SMQ[SMQ$T_NAME];
2 MSGVEC[4] = SJH[SJH$T_NAME];
2 MSGVEC[5] = SJH$S_USERNAME;
2 MSGVEC[6] = SJH[SJH$T_USERNAME];
2 MSGVEC[7] = .BBLOCK[SJH[SJH$T_OPERATOR_REQUEST], FVDF_LENGTH];
2 MSGVEC[8] = BUFFER;
2 $PUTMSG(MSGVEC=MSGVEC, ACTRTN=OPERATOR_REQUEST_ACTION);
```

```
;  296         1333  1 END;


                                                                          .EXTRN  SYS$PUTMSG

                                                       0004 00000 OPERATOR_REQUEST:
                                                                          .WORD   Save R2                                       ; 1276
                                    5E       FF58   CE   9E 00002         MOVAB   -168(SP), SP
                                                    5E   DD 00007         PUSHL   SP                                            ; 1317
                                    7E         84   8F   9A 00009         MOVZBL  #132, -(SP)                                   ;
                                    52         08   AC   D0 0000D         MOVL    SJH, R2                                       ;
                                             01AC   C2   9F 00011         PUSHAB  428(R2)                                       ;
                                                    06   DD 00015         PUSHL   #6                                            ;
                         00000000G  EF              04   FB 00017         CALLS   #4, FETCH_VARIABLE_DATA                       ;
                                DC  AD              08   D0 0001E         MOVL    #8, MSGVEC                                    ; 1323
                                E0  AD 00048450     8F   D0 00022         MOVL    #296016, MSGVEC+4                             ; 1324
                                E4  AD              06   D0 0002A         MOVL    #6, MSGVEC+8                                  ; 1325
                   E8   AD      04  AC 000000B0     8F   C1 0002E         ADDL3   #176, SMQ, MSGVEC+12                          ; 1326
                   EC   AD      08  AC 00000108     8F   C1 00038         ADDL3   #264, SJH, MSGVEC+16                          ; 1327
                                F0  AD              0C   D0 00042         MOVL    #12, MSGVEC+20                                ; 1328
                   F4   AD      08  AC 00000148     8F   C1 00046         ADDL3   #328, SJH, MSGVEC+24                          ; 1329
                                F8  AD       01AC   C2   3C 00050         MOVZWL  428(R2), MSGVEC+28                            ; 1330
                                FC  AD              6E   9E 00056         MOVAB   BUFFER, MSGVEC+32                             ; 1331
                                                    7E   7C 0005A         CLRQ    -(SP)                                         ; 1332
                                             FF35   CF   9F 0005C         PUSHAB  OPERATOR_REQUEST_ACTION                       ;
                                               DC   AD   9F 00060         PUSHAB  MSGVEC                                        ;
                         00000000G  00              04   FB 00063         CALLS   #4, SYS$PUTMSG                                ;
                                                         04 0006A         RET                                                   ; 1333

; Routine Size:  107 bytes,    Routine Base:  CODE + 006B
;   298            1334   1 ROUTINE SEND_SYMBIONT_MESSAGE(SMQ,MSG_DESC): NOVALUE=
;   299            1335   1
;   300            1336   1 !++
;   301            1337   1 !
;   302            1338   1 ! FUNCTIONAL DESCRIPTION:
;   303            1339   1 !       This routine sends a message to a specified symbiont.
;   304            1340   1 !
;   305            1341   1 ! INPUT PARAMETERS:
;   306            1342   1 !       SMQ             - Pointer to SMQ.
;   307            1343   1 !       MSG_DESC        - Descriptor for message.
;   308            1344   1 !
;   309            1345   1 ! IMPLICIT INPUTS:
;   310            1346   1 !       NONE
;   311            1347   1 !
;   312            1348   1 ! OUTPUT PARAMETERS:
;   313            1349   1 !       NONE
;   314            1350   1 !
;   315            1351   1 ! IMPLICIT OUTPUTS:
;   316            1352   1 !       NONE
;   317            1353   1 !
;   318            1354   1 ! ROUTINE VALUE:
;   319            1355   1 !       NONE
;   320            1356   1 !
;   321            1357   1 ! SIDE EFFECTS:
;   322            1358   1 !       Message written to mailbox.
;   323            1359   1 !
;   324            1360   1 !--
;   325            1361   1
;   326            1362   2 BEGIN
;   327            1363   2 MAP
;   328            1364   2         SMQ:            REF BBLOCK,     ! Pointer to SMQ.
;   329            1365   2         MSG_DESC:       REF BBLOCK;     ! Descriptor for message
;   330            1366   2 LOCAL
;   331            1367   2         STATUS;                         ! Status return
;   332            1368   2
;   333            1369   2
;   334            1370   2 ! Write the message without waiting.
;   335            1371   2 !
;   336          P 1372   2 STATUS = $QIO(
;   337          P 1373   2     FUNC=IO$_WRITEVBLK OR IO$M_NOW OR IO$M_NORSWAIT,
;   338          P 1374   2     CHAN=.BBLOCK[.SMQ[SMQ$L_STREAM_SCT], SCT_W_MAILBOX],
;   339          P 1375   2     P1=.MSG_DESC[DSC$A_POINTER],
;   340            1376   2     P2=.MSG_DESC[DSC$W_LENGTH]);
;   341            1377   2 IF NOT .STATUS THEN SIGNAL(JBC$_WRISMBMBX OR STS$K_ERROR, 0, .STATUS);
;   342            1378   1 END;


                                                   .EXTRN  SYS$QIO

                                  0000 00000 SEND_SYMBIONT_MESSAGE:
                                                   .WORD   Save nothing                              ; 1334
                                 7E  7C 00002      CLRQ    -(SP)                                     ; 1376
                                 7E  7C 00004      CLRQ    -(SP)                                     ;
                 50       08  AC  D0 00006         MOVL    MSG_DESC, R0                              ;
                 7E           60  3C 0000A         MOVZWL  (R0), -(SP)                               ;
                          04  A0  DD 0000D         PUSHL   4(R0)                                     ;
```

```
                                      7E  7C 00010          CLRQ    -(SP)                                       ;
                                      7E  D4 00012          CLRL    -(SP)                                       ;
                     7E      0470     8F  3C 00014          MOVZWL  #1136, -(SP)                                ;
                     50        04     AC  D0 00019          MOVL    SMQ, R0                                     ;
                     50      00FC     C0  D0 0001D          MOVL    252(R0), R0                                 ;
                     7E        06     A0  3C 00022          MOVZWL  6(R0), -(SP)                                ;
                                      7E  D4 00026          CLRL    -(SP)                                       ;
          00000000G  00               0C  FB 00028          CALLS   #12, SYS$QIO                                ;
                     11               50  E8 0002F          BLBS    STATUS, 1$                                  ; 1377
                                      50  DD 00032          PUSHL   STATUS                                      ;
                                      7E  D4 00034          CLRL    -(SP)                                       ;
                         0004847A     8F  DD 00036          PUSHL   #296058                                     ;
          00000000G  00               03  FB 0003C          CALLS   #3, LIB$SIGNAL                              ;
                                          04 00043 1$:      RET                                                 ; 1378

; Routine Size:  68 bytes,    Routine Base:  CODE + 00D6
```

```
1 GLOBAL ROUTINE START_SYMBIONT_TASK(SMQ_N,SMQ,SJH_N,SJH,SQR_N,SQR): NOVALUE=
1
1 !++
1 !
1 ! FUNCTIONAL DESCRIPTION:
1 !       This routine sends the "start task" message to a symbiont.
1 !
1 ! INPUT PARAMETERS:
1 !       SMQ_N           - Record number of SMQ.
1 !       SMQ             - Pointer to SMQ.
1 !       SJH_N           - Record number of SJH.
1 !       SJH             - Pointer to SJH.
1 !       SQR_N           - Record number of SQR.
1 !       SQR             - Pointer to SQR.
1 !
1 ! IMPLICIT INPUTS:
1 !       NONE
1 !
1 ! OUTPUT PARAMETERS:
1 !       NONE
1 !
1 ! IMPLICIT OUTPUTS:
1 !       NONE
1 !
1 ! ROUTINE VALUE:
1 !       NONE
1 !
1 ! SIDE EFFECTS:
1 !       NONE
1 !
1 !--
1
2 BEGIN
2 MAP
2       SMQ:            REF BBLOCK,             ! Pointer to SMQ
2       SJH:            REF BBLOCK,             ! Pointer to SJH
2       SQR:            REF BBLOCK;             ! Pointer to SQR
2 LOCAL
2       FIRST_FILE,                             ! True if first file in job
2       LAST_FILE,                              ! True if last file in job
2       SFM:            REF BBLOCK,             ! Pointer to SFM
2       QSMQ:           REF BBLOCK,             ! Pointer to job's SMQ
2       SMBMSG:         BBLOCK[JBC$K_SMBMBXSIZ],! Message buffer
2       SMBITM:         REF BBLOCK,             ! Cursor for message items
2       SMBMSG_DESC:    VECTOR[2];              ! Descriptor for message buffer
2
2
2 ! Read the form definition.
2 !
2 SFM = READ_RECORD(.SJH[SJH$L_FORM_LINK]);
2
2
2 ! Message header.
2 !
2 SMBMSG[SMBMSG$W_REQUEST_CODE] = SMBMSG$K_START_TASK;
2 SMBMSG[SMBMSG$B_STRUCTURE_LEVEL] = SMBMSG$K_STRUCTURE_LEVEL;
2 SMBMSG[SMBMSG$B_STREAM_INDEX] = .SMQ[SMQ$B_STREAM_INDEX];
```

```
2 SMBITM = SMBMSG + SMBMSG$S_REQUEST_HEADER;
2
2
2 ! Account name.
2 !
2 SMBITM[SMBMSG$W_ITEM_SIZE] = SJH$S_ACCOUNT;
2 SMBITM[SMBMSG$W_ITEM_CODE] = SMBMSG$K_ACCOUNT_NAME;
2 SMBITM = .SMBITM + SMBMSG$S_ITEM_HEADER;
2 MOVC3(
2     %REF(SJH$S_ACCOUNT),
2     SJH[SJH$T_ACCOUNT],
2     .SMBITM; ,,, SMBITM);
2
2
2 ! After time.
2 !
2 SMBITM[SMBMSG$W_ITEM_SIZE] = SJH$S_AFTER_TIME;
2 SMBITM[SMBMSG$W_ITEM_CODE] = SMBMSG$K_AFTER_TIME;
2 SMBITM = .SMBITM + SMBMSG$S_ITEM_HEADER;
2 COPY_TIME(SJH[SJH$Q_AFTER_TIME], .SMBITM);
2 SMBITM = .SMBITM + SJH$S_AFTER_TIME;
2
2
2 ! Form bottom margin.
2 !
2 SMBITM[SMBMSG$W_ITEM_SIZE] = 4;
2 SMBITM[SMBMSG$W_ITEM_CODE] = SMBMSG$K_BOTTOM_MARGIN;
2 SMBITM = .SMBITM + SMBMSG$S_ITEM_HEADER;
2 .SMBITM = .SFM[SFM$B_MARGIN_BOTTOM];
2 SMBITM = .SMBITM + 4;
2
2
2 ! Characteristics.
2 !
2 SMBITM[SMBMSG$W_ITEM_SIZE] = SJH$S_CHARACTERISTICS;
2 SMBITM[SMBMSG$W_ITEM_CODE] = SMBMSG$K_CHARACTERISTICS;
2 SMBITM = .SMBITM + SMBMSG$S_ITEM_HEADER;
2 MOVC3(
2     %REF(SJH$S_CHARACTERISTICS),
2     SJH[SJH$T_CHARACTERISTICS],
2     .SMBITM; ,,, SMBITM);
2
2
2 ! Checkpoint data.
2 !
2 IF .SJH[SJH$L_CURRENT_FILE_CHKPT] EQL .SQR_N
2 AND .SJH[SJH$B_JOB_COPIES_CHKPT] EQL .SJH[SJH$B_JOB_COPIES_DONE]
2 AND .SJH[SJH$B_FILE_COPIES_CHKPT] EQL .SJH[SJH$B_FILE_COPIES_DONE]
2 THEN
2     SMBITM = FETCH_VARIABLE_ITEM(
2         SJH$S_CHECKPOINT, SJH[SJH$T_CHECKPOINT],
2         SMBMSG$K_CHECKPOINT_DATA,
2         .SMBITM);
2
2
2 ! Entry number.
2 !
```

```
2 SMBITM[SMBMSG$W_ITEM_SIZE] = 4;
2 SMBITM[SMBMSG$W_ITEM_CODE] = SMBMSG$K_ENTRY_NUMBER;
2 SMBITM = .SMBITM + SMBMSG$S_ITEM_HEADER;
2 .SMBITM = .SJH[SYM$L_ENTRY_NUMBER];
2 SMBITM = .SMBITM + 4;
2
2
2 ! File copies.
2 !
2 SMBITM[SMBMSG$W_ITEM_SIZE] = 4;
2 SMBITM[SMBMSG$W_ITEM_CODE] = SMBMSG$K_FILE_COPIES;
2 SMBITM = .SMBITM + SMBMSG$S_ITEM_HEADER;
2 .SMBITM = .SQR[SQR$B_FILE_COPIES];
2 SMBITM = .SMBITM + 4;
2
2
2 ! File copy number.
2 !
2 SMBITM[SMBMSG$W_ITEM_SIZE] = 4;
2 SMBITM[SMBMSG$W_ITEM_CODE] = SMBMSG$K_FILE_COUNT;
2 SMBITM = .SMBITM + SMBMSG$S_ITEM_HEADER;
2 .SMBITM = .SJH[SJH$B_FILE_COPIES_DONE] + 1;
2 SMBITM = .SMBITM + 4;
2
2
2 ! File setup modules.
2 !
2 SMBITM = FETCH_VARIABLE_ITEM(
2     SQR$S_FILE_SETUP_MODULES, SQR[SQR$T_FILE_SETUP_MODULES],
2     SMBMSG$K_FILE_SETUP_MODULES,
2     .SMBITM);
2
2
2 ! First page number.
2 !
2 IF .SQR[SQR$L_FIRST_PAGE] NEQ 0
2 THEN
3     BEGIN
3     SMBITM[SMBMSG$W_ITEM_SIZE] = 4;
3     SMBITM[SMBMSG$W_ITEM_CODE] = SMBMSG$K_FIRST_PAGE;
3     SMBITM = .SMBITM + SMBMSG$S_ITEM_HEADER;
3     .SMBITM = .SQR[SQR$L_FIRST_PAGE];
3     SMBITM = .SMBITM + 4;
2     END;
2
2
2 ! Form length.
2 !
2 SMBITM[SMBMSG$W_ITEM_SIZE] = 4;
2 SMBITM[SMBMSG$W_ITEM_CODE] = SMBMSG$K_FORM_LENGTH;
2 SMBITM = .SMBITM + SMBMSG$S_ITEM_HEADER;
2 .SMBITM = .SFM[SFM$B_LENGTH];
2 SMBITM = .SMBITM + 4;
2
2
2 ! Form name.
2 !
```

```
2 SMBITM[SMBMSG$W_ITEM_SIZE] = CH$RCHAR(SFM[SFM$T_NAME]);
2 SMBITM[SMBMSG$W_ITEM_CODE] = SMBMSG$K_FORM_NAME;
2 SMBITM = .SMBITM + SMBMSG$S_ITEM_HEADER;
2 MOVC3(
2     %REF(CH$RCHAR(SFM[SFM$T_NAME])),
2     SFM[SFM$T_NAME] + 1,
2     .SMBITM; ,,, SMBITM);
2
2
2 ! Form setup modules.
2 !
2 SMBITM = FETCH_VARIABLE_ITEM(
2     SFM$S_FORM_SETUP_MODULES, SFM[SFM$T_FORM_SETUP_MODULES],
2     SMBMSG$K_FORM_SETUP_MODULES,
2     .SMBITM);
2
2
2 ! Form width.
2 !
2 SMBITM[SMBMSG$W_ITEM_SIZE] = 4;
2 SMBITM[SMBMSG$W_ITEM_CODE] = SMBMSG$K_FORM_WIDTH;
2 SMBITM = .SMBITM + SMBMSG$S_ITEM_HEADER;
2 .SMBITM = .SFM[SFM$W_WIDTH];
2 SMBITM = .SMBITM + 4;
2
2
2 ! File identification or condition vector.
2 !
2 IF CH$RCHAR(SQR[SQR$T_FILE_ID_DVI]) NEQ 0
2 THEN
3     BEGIN
3     SMBITM[SMBMSG$W_ITEM_SIZE] = SQR$S_FILE_IDENTIFICATION;
3     SMBITM[SMBMSG$W_ITEM_CODE] = SMBMSG$K_FILE_IDENTIFICATION;
3     SMBITM = .SMBITM + SMBMSG$S_ITEM_HEADER;
3     MOVC3(
3         %REF(SQR$S_FILE_IDENTIFICATION),
3         SQR[SQR$T_FILE_IDENTIFICATION],
3         .SMBITM; ,,, SMBITM);
3     END
2 ELSE
3     BEGIN
3     SMBITM[SMBMSG$W_ITEM_SIZE] = SQR$S_CONDITION_VECTOR;
3     SMBITM[SMBMSG$W_ITEM_CODE] = SMBMSG$K_MESSAGE_VECTOR;
3     SMBITM = .SMBITM + SMBMSG$S_ITEM_HEADER;
3     MOVC3(
3         %REF(SQR$S_CONDITION_VECTOR),
3         SQR[SQR$L_CONDITION_T],
3         .SMBITM; ,,, SMBITM);
2     END;
2
2
2 ! File specification.
2 !
2 SMBITM[SMBMSG$W_ITEM_SIZE] = CH$RCHAR(SQR[SQR$T_FILE_SPECIFICATION]);
2 SMBITM[SMBMSG$W_ITEM_CODE] = SMBMSG$K_FILE_SPECIFICATION;
2 SMBITM = .SMBITM + SMBMSG$S_ITEM_HEADER;
2 MOVC3(
2       %REF(CH$RCHAR(SQR[SQR$T_FILE_SPECIFICATION])),
2       SQR[SQR$T_FILE_SPECIFICATION]+1,
2       .SMBITM; ..., SMBITM);
2
2
2  ! Job copies.
2  !
2  SMBITM[SMBMSG$W_ITEM_SIZE] = 4;
2  SMBITM[SMBMSG$W_ITEM_CODE] = SMBMSG$K_JOB_COPIES;
2  SMBITM = .SMBITM + SMBMSG$S_ITEM_HEADER;
2  .SMBITM = .SJH[SJH$B_JOB_COPIES];
2  SMBITM = .SMBITM + 4;
2
2
2  ! Job copy number.
2  !
2  SMBITM[SMBMSG$W_ITEM_SIZE] = 4;
2  SMBITM[SMBMSG$W_ITEM_CODE] = SMBMSG$K_JOB_COUNT;
2  SMBITM = .SMBITM + SMBMSG$S_ITEM_HEADER;
2  .SMBITM = .SJH[SJH$B_JOB_COPIES_DONE] + 1;
2  SMBITM = .SMBITM + 4;
2
2
2  ! Job name.
2  !
2  SMBITM[SMBMSG$W_ITEM_SIZE] = CH$RCHAR(SJH[SJH$T_NAME]);
2  SMBITM[SMBMSG$W_ITEM_CODE] = SMBMSG$K_JOB_NAME;
2  SMBITM = .SMBITM + SMBMSG$S_ITEM_HEADER;
2  MOVC3(
2      %REF(CH$RCHAR(SJH[SJH$T_NAME])),
2      SJH[SJH$T_NAME]+1,
2      .SMBITM; ..., SMBITM);
2
2
2  ! Job reset modules.
2  !
2  SMBITM = FETCH_VARIABLE_ITEM(
2      SMQ$S_JOB_RESET_MODULES, SMQ[SMQ$T_JOB_RESET_MODULES],
2      SMBMSG$K_JOB_RESET_MODULES,
2      .SMBITM);
2
2
2  ! Last page number.
2  !
2  IF .SQR[SQR$L_LAST_PAGE] NEQ 0
2  THEN
3      BEGIN
3      SMBITM[SMBMSG$W_ITEM_SIZE] = 4;
3      SMBITM[SMBMSG$W_ITEM_CODE] = SMBMSG$K_LAST_PAGE;
3      SMBITM = .SMBITM + SMBMSG$S_ITEM_HEADER;
3      .SMBITM = .SQR[SQR$L_LAST_PAGE];
3      SMBITM = .SMBITM + 4;
2      END;
2
2
2  ! Form left margin.
2  !
```

```
2 SMBITM[SMBMSG$W_ITEM_SIZE] = 4;
2 SMBITM[SMBMSG$W_ITEM_CODE] = SMBMSG$K_LEFT_MARGIN;
2 SMBITM = .SMBITM + SMBMSG$S_ITEM_HEADER;
2 .SMBITM = .SFM[SFM$W_MARGIN_LEFT];
2 SMBITM = .SMBITM + 4;
2
2
2 ! Note.
2 !
2 SMBITM = FETCH_VARIABLE_ITEM(
2     SJH$S_NOTE, SJH[SJH$T_NOTE],
2     SMBMSG$K_NOTE,
2     .SMBITM);
2
2
2 ! Page setup modules.
2 !
2 SMBITM = FETCH_VARIABLE_ITEM(
2     SFM$S_PAGE_SETUP_MODULES, SFM[SFM$T_PAGE_SETUP_MODULES],
2     SMBMSG$K_PAGE_SETUP_MODULES,
2     .SMBITM);
2
2
2 ! Parameters.
2 !
2 SMBITM = FETCH_VARIABLE_ITEM_LIST(
2     SJH$S_PARAMETERS, SJH[SJH$T_PARAMETERS],
2     SMBMSG$K_PARAMETER_1,
2     .SMBITM);
2
2
2 ! Print control flags.
2 !
2 SMBITM[SMBMSG$W_ITEM_SIZE] = 4;
2 SMBITM[SMBMSG$W_ITEM_CODE] = SMBMSG$K_PRINT_CONTROL;
2 SMBITM = .SMBITM + SMBMSG$S_ITEM_HEADER;
2 .SMBITM = 0;
2 IF .SQR[SQR$V_DOUBLE_SPACE] THEN SMBITM[SMBMSG$V_DOUBLE_SPACE] = TRUE;
2 IF .SQR[SQR$V_PAGE_HEADER] THEN SMBITM[SMBMSG$V_PAGE_HEADER] = TRUE;
2 IF .SQR[SQR$V_PASSALL] THEN SMBITM[SMBMSG$V_PASSALL] = TRUE;
2 IF .SFM[SFM$V_SHEET_FEED] THEN SMBITM[SMBMSG$V_SHEET_FEED] = TRUE;
2 IF .SFM[SFM$V_TRUNCATE] THEN SMBITM[SMBMSG$V_TRUNCATE] = TRUE;
2 IF .SFM[SFM$V_WRAP] THEN SMBITM[SMBMSG$V_WRAP] = TRUE;
2
2
2 ! Compute paginate bit.
2 !
2 IF .SQR[SQR$V_PAGINATE_EXPLICIT]
2 THEN
3     BEGIN
3     IF .SQR[SQR$V_PAGINATE]
3     THEN
3         SMBITM[SMBMSG$V_PAGINATE] = TRUE;
3     END
3
2 ELSE IF .SJH[SJH$V_PAGINATE_EXPLICIT]
2 THEN
```

```
3           BEGIN
3           IF .SJH[SJH$V_PAGINATE]
3           THEN
3               SMBITM[SMBMSG$V_PAGINATE] = TRUE;
3           END
3
2       ELSE
3           BEGIN
3           IF .SMQ[SMQ$V_PAGINATE]
3           THEN
3               SMBITM[SMBMSG$V_PAGINATE] = TRUE;
2           END;
2
2       SMBITM = .SMBITM + 4;
2
2
2       ! Separation control flags.
2       !
2       SMBITM[SMBMSG$W_ITEM_SIZE] = 4;
2       SMBITM[SMBMSG$W_ITEM_CODE] = SMBMSG$K_SEPARATION_CONTROL;
2       SMBITM = .SMBITM + SMBMSG$S_ITEM_HEADER;
2       .SMBITM = 0;
2       IF .BBLOCK[SMQ[SMQ$T_JOB_RESET_MODULES], FVDF_LENGTH] NEQ 0
2           THEN SMBITM[SMBMSG$V_JOB_RESET_ABORT] = TRUE;
2
2
2       ! Special actions for the first file in the job.
2       !
2       FIRST_FILE = FALSE;
2       IF
3           (.SJH[SJH$B_JOB_COPIES_DONE] EQL 0
3           AND .SJH[SJH$B_FILE_COPIES_DONE] EQL 0
3           AND .SJH[SJH$L_FILE_LIST] EQL .SQR_N)
2       OR
2           .SJH[SJH$V_RESTARTING]
2       THEN
3           BEGIN
3           SJH[SJH$V_RESTARTING] = FALSE;
3           IF .SMQ[SMQ$V_JOB_FLAG] THEN SMBITM[SMBMSG$V_JOB_FLAG] = TRUE;
3           IF .SMQ[SMQ$V_JOB_BURST] THEN SMBITM[SMBMSG$V_JOB_BURST] = TRUE;
3           FIRST_FILE = TRUE;
2           END;
2
2
2       ! Compute file burst bit.
2       !
2       IF .SQR[SQR$V_FILE_BURST_EXPLICIT]
2       THEN
3           BEGIN
3           IF .SQR[SQR$V_FILE_BURST]
3           THEN
3               SMBITM[SMBMSG$V_FILE_BURST] = TRUE;
3           END
3
2       ELSE IF .SJH[SJH$V_FILE_BURST_EXPLICIT]
2       THEN
3           BEGIN
```

```
3           IF .SJH[SJH$V_FILE_BURST]
4           OR (.SJH[SJH$V_FILE_BURST_ONE] AND .FIRST_FILE)
3           THEN
3               SMBITM[SMBMSG$V_FILE_BURST] = TRUE;
3           END
3
2       ELSE
3           BEGIN
3           IF .SMQ[SMQ$V_FILE_BURST]
4           OR (.SMQ[SMQ$V_FILE_BURST_ONE] AND .FIRST_FILE)
3           THEN
3               SMBITM[SMBMSG$V_FILE_BURST] = TRUE;
2           END;
2
2
2       ! Compute file flag bit.
2       !
2       IF .SQR[SQR$V_FILE_FLAG_EXPLICIT]
2       THEN
3           BEGIN
3           IF .SQR[SQR$V_FILE_FLAG]
3           THEN
3               SMBITM[SMBMSG$V_FILE_FLAG] = TRUE;
3           END
3
2       ELSE IF .SJH[SJH$V_FILE_FLAG_EXPLICIT]
2       THEN
3           BEGIN
3           IF .SJH[SJH$V_FILE_FLAG]
4           OR (.SJH[SJH$V_FILE_FLAG_ONE] AND .FIRST_FILE)
3           THEN
3               SMBITM[SMBMSG$V_FILE_FLAG] = TRUE;
3           END
3
2       ELSE
3           BEGIN
3           IF .SMQ[SMQ$V_FILE_FLAG]
4           OR (.SMQ[SMQ$V_FILE_FLAG_ONE] AND .FIRST_FILE)
3           THEN
3               SMBITM[SMBMSG$V_FILE_FLAG] = TRUE;
2           END;
2
2
2       ! Special actions for last file in job.
2       !
2       LAST_FILE = FALSE;
2       IF .SJH[SJH$B_JOB_COPIES_DONE] + 1 GEQU .SJH[SJH$B_JOB_COPIES]
2       AND .SJH[SJH$B_FILE_COPIES_DONE] + 1 GEQU .SQR[SQR$B_FILE_COPIES]
2       AND .SQR[SYM$L_LINK] EQL 0
2       THEN
3           BEGIN
3           IF .SMQ[SMQ$V_JOB_TRAILER] THEN SMBITM[SMBMSG$V_JOB_TRAILER] = TRUE;
3           IF .BBLOCK[SMQ[SMQ$T_JOB_RESET_MODULES], FVDF_LENGTH] NEQ 0
3               THEN SMBITM[SMBMSG$V_JOB_RESET] = TRUE;
3           LAST_FILE = TRUE;
2           END;
2
```

```
2
2  ! Compute file trailer bits.
2  !
2  IF .SQR[SQR$V_FILE_TRAILER_EXPLICIT]
2  THEN
3      BEGIN
3      IF .SQR[SQR$V_FILE_TRAILER]
3      THEN
4          BEGIN
4          SMBITM[SMBMSG$V_FILE_TRAILER] = TRUE;
4          SMBITM[SMBMSG$V_FILE_TRAILER_ABORT] = TRUE;
3          END;
3      END
3
2  ELSE IF .SJH[SJH$V_FILE_TRAILER_EXPLICIT]
2  THEN
3      BEGIN
3      IF .SJH[SJH$V_FILE_TRAILER]
3      THEN
4          BEGIN
4          SMBITM[SMBMSG$V_FILE_TRAILER] = TRUE;
4          SMBITM[SMBMSG$V_FILE_TRAILER_ABORT] = TRUE;
4          END
4
3      ELSE IF .SJH[SJH$V_FILE_TRAILER_ONE]
3      THEN
4          BEGIN
4          IF .LAST_FILE THEN SMBITM[SMBMSG$V_FILE_TRAILER] = TRUE;
4          SMBITM[SMBMSG$V_FILE_TRAILER_ABORT] = TRUE;
3          END;
3      END
3
2  ELSE
3      BEGIN
3      IF .SMQ[SMQ$V_FILE_TRAILER]
3      THEN
4          BEGIN
4          SMBITM[SMBMSG$V_FILE_TRAILER] = TRUE;
4          SMBITM[SMBMSG$V_FILE_TRAILER_ABORT] = TRUE;
4          END
4
3      ELSE IF .SMQ[SMQ$V_FILE_TRAILER_ONE]
3      THEN
4          BEGIN
4          IF .LAST_FILE THEN SMBITM[SMBMSG$V_FILE_TRAILER] = TRUE;
4          SMBITM[SMBMSG$V_FILE_TRAILER_ABORT] = TRUE;
3          END;
2      END;
2  SMBITM = .SMBITM + 4;
2
2
2  ! Request control flags.
2  !
2  SMBITM[SMBMSG$W_ITEM_SIZE] = 4;
2  SMBITM[SMBMSG$W_ITEM_CODE] = SMBMSG$K_REQUEST_CONTROL;
2  SMBITM = .SMBITM + SMBMSG$S_ITEM_HEADER;
2  .SMBITM = 0;
```

```
2 IF .SJH[SJH$V_RESTARTING] THEN SMBITM[SMBMSG$V_RESTARTING] = TRUE;
2 IF .BBLOCK[SJH[SJH$T_OPERATOR_REQUEST], FVDF_LENGTH] NEQ 0
2 AND .FIRST_FILE
2 THEN
3     BEGIN
3     SMQ[SMQ$V_OPERATOR_REQUEST] = TRUE;
3     SMBITM[SMBMSG$V_PAUSE_COMPLETE] = FALSE;    ! Temporarily cleared (V03-015)
2     END;
2 SMBITM = .SMBITM + 4;
2
2
2 ! Job priority.
2 !
2 SMBITM[SMBMSG$W_ITEM_SIZE] = 4;
2 SMBITM[SMBMSG$W_ITEM_CODE] = SMBMSG$K_PRIORITY;
2 SMBITM = .SMBITM + SMBMSG$S_ITEM_HEADER;
2 .SMBITM = .SJH[SJH$B_PRIORITY];
2 SMBITM = .SMBITM + 4;
2
2
2 ! Queue name.
2 !
2 QSMQ = READ_RECORD(.SJH[SJH$L_QUEUE_LINK]);
2 SMBITM[SMBMSG$W_ITEM_SIZE] = CH$RCHAR(QSMQ[SMQ$T_NAME]);
2 SMBITM[SMBMSG$W_ITEM_CODE] = SMBMSG$K_QUEUE;
2 SMBITM = .SMBITM + SMBMSG$S_ITEM_HEADER;
2 MOVC3(
2     %REF(CH$RCHAR(QSMQ[SMQ$T_NAME])),
2     QSMQ[SMQ$T_NAME]+1,
2     .SMBITM; ..., SMBITM);
2 RELEASE_RECORD(.SJH[SJH$L_QUEUE_LINK]);
2
2
2 ! Form right margin.
2 !
2 SMBITM[SMBMSG$W_ITEM_SIZE] = 4;
2 SMBITM[SMBMSG$W_ITEM_CODE] = SMBMSG$K_RIGHT_MARGIN;
2 SMBITM = .SMBITM + SMBMSG$S_ITEM_HEADER;
2 .SMBITM = .SFM[SFM$W_MARGIN_RIGHT];
2 SMBITM = .SMBITM + 4;
2
2
2 ! Time queued.
2 !
2 SMBITM[SMBMSG$W_ITEM_SIZE] = SJH$S_TIME;
2 SMBITM[SMBMSG$W_ITEM_CODE] = SMBMSG$K_TIME_QUEUED;
2 SMBITM = .SMBITM + SMBMSG$S_ITEM_HEADER;
2 COPY_TIME(SJH[SJH$Q_TIME], .SMBITM);
2 SMBITM = .SMBITM + SJH$S_TIME;
2
2
2 ! Form top margin.
2 !
2 SMBITM[SMBMSG$W_ITEM_SIZE] = 4;
2 SMBITM[SMBMSG$W_ITEM_CODE] = SMBMSG$K_TOP_MARGIN;
2 SMBITM = .SMBITM + SMBMSG$S_ITEM_HEADER;
2 .SMBITM = .SFM[SFM$B_MARGIN_TOP];
```

```
2 SMBITM = .SMBITM + 4;
2
2
2 ! UIC.
2 !
2 SMBITM[SMBMSG$W_ITEM_SIZE] = 4;
2 SMBITM[SMBMSG$W_ITEM_CODE] = SMBMSG$K_UIC;
2 SMBITM = .SMBITM + SMBMSG$S_ITEM_HEADER;
2 .SMBITM = .SJH[SJH$L_UIC];
2 SMBITM = .SMBITM + 4;
2
2
2 ! User name.
2 !
2 SMBITM[SMBMSG$W_ITEM_SIZE] = SJH$S_USERNAME;
2 SMBITM[SMBMSG$W_ITEM_CODE] = SMBMSG$K_USER_NAME;
2 SMBITM = .SMBITM + SMBMSG$S_ITEM_HEADER;
2 MOVC3(
2     %REF(SJH$S_USERNAME),
2     SJH[SJH$T_USERNAME],
2     .SMBITM; ,,, SMBITM);
2
2
2 ! Trailing zero item.
2 !
2 SMBITM[SMBMSG$W_ITEM_SIZE] = 0;
2 SMBITM[SMBMSG$W_ITEM_CODE] = 0;
2 SMBITM = .SMBITM + SMBMSG$S_ITEM_HEADER;
2
2
2 ! Send the message to the symbiont.
2 !
2 SMBMSG_DESC[1] = SMBMSG;
2 SMBMSG_DESC[0] = .SMBITM - .SMBMSG_DESC[1];
2 SEND_SYMBIONT_MESSAGE(.SMQ, SMBMSG_DESC);
2
2
2 ! Update SMQ.
2 !
2 SMQ[SMQ$L_FORM_LINK] = .SJH[SJH$L_FORM_LINK];
2
2
2 ! Update SJH.
2 !
2 SJH[SJH$L_CURRENT_FILE_CHKPT] = .SQR_N;
2 SJH[SJH$B_JOB_COPIES_CHKPT] = .SJH[SJH$B_JOB_COPIES_DONE];
2 SJH[SJH$B_FILE_COPIES_CHKPT] = .SJH[SJH$B_FILE_COPIES_DONE];
2 SJH[SJH$L_CURRENT_FILE_LINK] = .SQR_N;
2 DEALLOCATE_VARIABLE_DATA(
2     SJH$S_CHECKPOINT,
2     SJH[SJH$T_CHECKPOINT]);
2 SJH[SJH$V_EXECUTING] = TRUE;
2 SJH[SJH$V_FILE_STARTING] = TRUE;
2 RELEASE_RECORD(.SJH[SJH$L_FORM_LINK]);
1 END;
```

```
                                  0FFC 00000           .ENTRY  START_SYMBIONT_TASK, Save R2,R3,R4,R5,R6,-  ; 1379
                                                               R7,R8,R9,R10,R11                              ;
                    5E      FBF8   CE   9E 00002           MOVAB   -1032(SP), SP                                 ;
                    56        10   AC   D0 00007           MOVL    SJH, R6                                       ; 1428
                            00FC   C6   9F 0000B           PUSHAB  252(R6)                                       ;
                              00   BE   DD 0000F           PUSHL   @0(SP)                                        ;
           00000000G  EF           01   FB 00012           CALLS   #1, READ_RECORD                               ;
                    59             50   D0 00019           MOVL    R0, SFM                                       ;
                 0C AE             05   B0 0001C           MOVW    #5, SMBMSG                                    ; 1433
                 0E AE             01   90 00020           MOVB    #1, SMBMSG+2                                  ; 1434
                    58        08   AC   D0 00024           MOVL    SMQ, R8                                       ; 1435
                 0F AE      0117   C8   90 00028           MOVB    279(R8), SMBMSG+3                             ;
                    53        10   AE   9E 0002E           MOVAB   SMBMSG+4, SMBITM                              ; 1436
                    83  00020008   8F   D0 00032           MOVL    #131080, (SMBITM)+                            ; 1441
      63         14 A6             08   28 00039           MOVC3   #8, 20(R6), (SMBITM)                          ; 1447
                    83  00030008   8F   D0 0003E           MOVL    #196616, (SMBITM)+                            ; 1452
                    83      0098   C6   7D 00045           MOVQ    152(R6), (SMBITM)+                            ; 1455
                    83  00050004   8F   D0 0004A           MOVL    #327684, (SMBITM)+                            ; 1461
                    83      015B   C9   9A 00051           MOVZBL  347(SFM), (SMBITM)+                           ; 1464
                    83  00060010   8F   D0 00056           MOVL    #393232, (SMBITM)+                            ; 1470
      63       00A0 C6             10   28 0005D           MOVC3   #16, 160(R6), (SMBITM)                        ; 1476
                 14 AC      00EC   C6   D1 00063           CMPL    236(R6), SQR_N                                ; 1481
                                   26   12 00069           BNEQ    1$                                            ;
               017C C6      017B   C6   91 0006B           CMPB    379(R6), 380(R6)                              ; 1482
                                   1D   12 00072           BNEQ    1$                                            ;
               0179 C6      0178   C6   91 00074           CMPB    376(R6), 377(R6)                              ; 1483
                                   14   12 0007B           BNEQ    1$                                            ;
                                   53   DD 0007D           PUSHL   SMBITM                                        ; 1488
                                   07   DD 0007F           PUSHL   #7                                            ; 1486
                            0180   C6   9F 00081           PUSHAB  384(R6)                                       ;
                                   20   DD 00085           PUSHL   #32                                           ;
           00000000G  EF           04   FB 00087           CALLS   #4, FETCH_VARIABLE_ITEM                       ;
                    53             50   D0 0008E           MOVL    R0, SMBITM                                    ;
                    83  000B0004   8F   D0 00091 1$:       MOVL    #720900, (SMBITM)+                            ; 1493
                    83        08   A6   D0 00098           MOVL    8(R6), (SMBITM)+                              ; 1496
                    83  000D0004   8F   D0 0009C           MOVL    #851972, (SMBITM)+                            ; 1502
                    57        18   AC   D0 000A3           MOVL    SQR, R7                                       ; 1505
                    83        44   A7   9A 000A7           MOVZBL  68(R7), (SMBITM)+                             ;
                    83  000E0004   8F   D0 000AB           MOVL    #917508, (SMBITM)+                            ; 1511
                    5B      0179   C6   9E 000B2           MOVAB   377(R6), R11                                  ; 1514
                    63             6B   9A 000B7           MOVZBL  (R11), (SMBITM)                               ;
                                   83   D6 000BA           INCL    (SMBITM)+                                     ;
                                   53   DD 000BC           PUSHL   SMBITM                                        ; 1523
                                   0F   DD 000BE           PUSHL   #15                                           ; 1521
                              45   A7   9F 000C0           PUSHAB  69(R7)                                        ;
                                   06   DD 000C3           PUSHL   #6                                            ;
           00000000G  EF           04   FB 000C5           CALLS   #4, FETCH_VARIABLE_ITEM                       ;
                    53             50   D0 000CC           MOVL    R0, SMBITM                                    ;
                              3C   A7   D5 000CF           TSTL    60(R7)                                        ; 1528
                                   0B   13 000D2           BEQL    2$                                            ;
                    83  00100004   8F   D0 000D4           MOVL    #1048580, (SMBITM)+                           ; 1531
                    83        3C   A7   D0 000DB           MOVL    60(R7), (SMBITM)+                             ; 1534
                    83  00110004   8F   D0 000DF 2$:       MOVL    #1114116, (SMBITM)+                           ; 1541
                    83      015A   C9   9A 000E6           MOVZBL  346(SFM), (SMBITM)+                           ; 1544
```

```
                      83       0110  C9  9B 000EB        MOVZBW  272(SFM), (SMBITM)+                    ; 1550
                      83             12  B0 000F0        MOVW    #18, (SMBITM)+                         ; 1551
                      50       0110  C9  9A 000F3        MOVZBL  272(SFM), R0                           ; 1554
           63   0111  C9             50  28 000F8        MOVC3   R0, 273(SFM), (SMBITM)                 ; 1556
                                     53  DD 000FE        PUSHL   SMBITM                                 ; 1564
                                     13  DD 00100        PUSHL   #19                                    ; 1562
                               015D  C9  9F 00102        PUSHAB  349(SFM)                               ;
                                     06  DD 00106        PUSHL   #6                                     ;
              00000000G   EF         04  FB 00108        CALLS   #4, FETCH_VARIABLE_ITEM                ;
                          53         50  D0 0010F        MOVL    R0, SMBITM                             ;
                      83 00140004    8F  D0 00112        MOVL    #1310724, (SMBITM)+                    ; 1569
                      83       0158  C9  3C 00119        MOVZWL  344(SFM), (SMBITM)+                    ; 1572
                                 1C  A7  95 0011E        TSTB    28(R7)                                 ; 1578
                                     0E  13 00121        BEQL    3$                                     ;
                      83 0015001C    8F  D0 00123        MOVL    #1376284, (SMBITM)+                    ; 1581
           63     1C  A7             1C  28 0012A        MOVC3   #28, 28(R7), (SMBITM)                  ; 1587
                                     0C  11 0012F        BRB     4$                                     ; 1578
                      83 001F000C    8F  D0 00131  3$:   MOVL    #2031628, (SMBITM)+                    ; 1591
           63     10  A7             0C  28 00138        MOVC3   #12, 16(R7), (SMBITM)                  ; 1597
                      83         4B  A7  9B 0013D  4$:   MOVZBW  75(R7), (SMBITM)+                      ; 1603
                      83             16  B0 00141        MOVW    #22, (SMBITM)+                         ; 1604
                      50         4B  A7  9A 00144        MOVZBL  75(R7), R0                             ; 1607
           63     4C  A7             50  28 00148        MOVC3   R0, 76(R7), (SMBITM)                   ; 1609
                      83 00170004    8F  D0 0014D        MOVL    #1507332, (SMBITM)+                    ; 1614
                      83       017A  C6  9A 00154        MOVZBL  378(R6), (SMBITM)+                     ; 1617
                      83 00180004    8F  D0 00159        MOVL    #1572868, (SMBITM)+                    ; 1623
                      5A       017C  C6  9E 00160        MOVAB   380(R6), R10                           ; 1626
                      63             6A  9A 00165        MOVZBL  (R10), (SMBITM)                        ;
                                     83  D6 00168        INCL    (SMBITM)+                              ;
                      83       0108  C6  9B 0016A        MOVZBW  264(R6), (SMBITM)+                     ; 1632
                      83             19  B0 0016F        MOVW    #25, (SMBITM)+                         ; 1633
                      50       0108  C6  9A 00172        MOVZBL  264(R6), R0                            ; 1636
           63   0109  C6             50  28 00177        MOVC3   R0, 265(R6), (SMBITM)                  ; 1638
                                     53  DD 0017D        PUSHL   SMBITM                                 ; 1646
                                     1A  DD 0017F        PUSHL   #26                                    ; 1644
                               0118  C8  9F 00181        PUSHAB  280(R8)                                ;
                                     06  DD 00185        PUSHL   #6                                     ;
              00000000G   EF         04  FB 00187        CALLS   #4, FETCH_VARIABLE_ITEM                ;
                          53         50  D0 0018E        MOVL    R0, SMBITM                             ;
                                 40  A7  D5 00191        TSTL    64(R7)                                 ; 1651
                                     0B  13 00194        BEQL    5$                                     ;
                      83 001B0004    8F  D0 00196        MOVL    #1769476, (SMBITM)+                    ; 1654
                      83         40  A7  D0 0019D        MOVL    64(R7), (SMBITM)+                      ; 1657
                      83 001C0004    8F  D0 001A1  5$:   MOVL    #1835012, (SMBITM)+                    ; 1664
                      83       0154  C9  3C 001A8        MOVZWL  340(SFM), (SMBITM)+                    ; 1667
                                     53  DD 001AD        PUSHL   SMBITM                                 ; 1676
                                     20  DD 001AF        PUSHL   #32                                    ; 1674
                               01A6  C6  9F 001B1        PUSHAB  422(R6)                                ;
                                     06  DD 001B5        PUSHL   #6                                     ;
              00000000G   EF         04  FB 001B7        CALLS   #4, FETCH_VARIABLE_ITEM                ;
                          53         50  D0 001BE        MOVL    R0, SMBITM                             ;
                                     53  DD 001C1        PUSHL   SMBITM                                 ; 1684
                                     21  DD 001C3        PUSHL   #33                                    ; 1682
                               0163  C9  9F 001C5        PUSHAB  355(SFM)                               ;
                                     06  DD 001C9        PUSHL   #6                                     ;
              00000000G   EF         04  FB 001CB        CALLS   #4, FETCH_VARIABLE_ITEM                ;
                          53         50  D0 001D2        MOVL    R0, SMBITM                             ;
                          53  DD 001D5        PUSHL   SMBITM                              ; 1692
                          22  DD 001D7        PUSHL   #34                                 ; 1690
                  01B2    C6  9F 001D9        PUSHAB  434(R6)
                          20  DD 001DD        PUSHL   #32
     00000000G  EF        04  FB 001DF        CALLS   #4, FETCH_VARIABLE_ITEM_LIST
                53        50  D0 001E6        MOVL    R0, SMBITM
                83 002A0004   8F  D0 001E9        MOVL    #2752516, (SMBITM)+                 ; 1697
                63            D4 001F0        CLRL    (SMBITM)                            ; 1700
                50      0C    A7  9E 001F2        MOVAB   12(R7), R0                          ; 1701
   03           60            02  E1 001F6        BBC     #2, (R0), 6$
                63            01  88 001FA        BISB2   #1, (SMBITM)
   03           60            09  E1 001FD 6$:    BBC     #9, (R0), 7$                        ; 1702
                63            02  88 00201        BISB2   #2, (SMBITM)
   03           60            0C  E1 00204 7$:    BBC     #12, (R0), 8$                       ; 1703
                63            08  88 00208        BISB2   #8, (SMBITM)
                03      0C    A9  E9 0020B 8$:    BLBC    12(SFM), 9$                         ; 1704
                63            20  88 0020F        BISB2   #32, (SMBITM)
   04     0C    A9            01  E1 00212 9$:    BBC     #1, 12(SFM), 10$                    ; 1705
                63      40    8F  88 00217        BISB2   #64, (SMBITM)
   04     0C    A9            02  E1 0021B 10$:   BBC     #2, 12(SFM), 11$                    ; 1706
                63      80    8F  88 00220        BISB2   #128, (SMBITM)
   06           60            0B  E1 00224 11$:   BBC     #11, (R0), 12$                      ; 1711
   15           60            0A  E1 00228        BBC     #10, (R0), 15$                      ; 1714
                              10  11 0022C        BRB     14$                                 ; 1716
                07      0E    A6  E9 0022E 12$:   BLBC    14(R6), 13$                         ; 1719
                        0D    A6  95 00232        TSTB    13(R6)                              ; 1722
                              0A  18 00235        BGEQ    15$
                              05  11 00237        BRB     14$                                 ; 1724
   03     0E    A8            01  E1 00239 13$:   BBC     #1, 14(R8), 15$                     ; 1729
                63            04  88 0023E 14$:   BISB2   #4, (SMBITM)                        ; 1731
                53            04  C0 00241 15$:   ADDL2   #4, SMBITM                          ; 1734
                83 00330004   8F  D0 00244        MOVL    #3342340, (SMBITM)+                 ; 1739
                63            D4 0024B        CLRL    (SMBITM)                            ; 1742
                55            D4 0024D        CLRL    R5                                  ; 1743
                  0118        C8  B5 0024F        TSTW    280(R8)
                              06  13 00253        BEQL    16$
                              55  D6 00255        INCL    R5
                63      80    8F  88 00257        BISB2   #128, (SMBITM)                      ; 1744
                              51  D4 0025B 16$:   CLRL    FIRST_FILE                          ; 1749
                              6A  95 0025D        TSTB    (R10)                               ; 1751
                              0C  12 0025F        BNEQ    17$
                              6B  95 00261        TSTB    (R11)                               ; 1752
                              08  12 00263        BNEQ    17$
          14    AC    00F4    C6  D1 00265        CMPL    244(R6), SQR_N                      ; 1753
                              05  13 0026B        BEQL    18$
   17     11    A6            02  E1 0026D 17$:   BBC     #2, 17(R6), 21$                     ; 1755
          11    A6            04  8A 00272 18$:   BICB2   #4, 17(R6)                          ; 1758
   03     0D    A8            05  E1 00276        BBC     #5, 13(R8), 19$                     ; 1759
                63            10  88 0027B        BISB2   #16, (SMBITM)
   03     0D    A8            04  E1 0027E 19$:   BBC     #4, 13(R8), 20$                     ; 1760
                63            20  88 00283        BISB2   #32, (SMBITM)
                51            01  D0 00286 20$:   MOVL    #1, FIRST_FILE                      ; 1761
   06           60            04  E1 00289 21$:   BBC     #4, (R0), 22$                       ; 1767
   23           60            03  E1 0028D        BBC     #3, (R0), 26$                       ; 1770
                              1E  11 00291        BRB     25$                                 ; 1772
   0C     0C    A6            02  E1 00293 22$:   BBC     #2, 12(R6), 23$                     ; 1775
   14     0C    A6            01  E0 00298        BBS     #1, 12(R6), 25$                     ; 1778
```

```
                    12        0C    A6              03  E1  0029D         BBC      #3, 12(R6), 26$                   ; 1779
                                                    0A  11  002A2         BRB      24$                               ;
                    08        0C    A8              04  E0  002A4  23$:   BBS      #4, 12(R8), 25$                   ; 1786
                    06        0C    A8              05  E1  002A9         BBC      #5, 12(R8), 26$                   ; 1787
                                    03              51  E9  002AE  24$:   BLBC     FIRST_FILE, 26$                   ;
                                    63              01  88  002B1  25$:   BISB2    #1, (SMBITM)                      ; 1789
                    06              60              06  E1  002B4  26$:   BBC      #6, (R0), 27$                     ; 1795
                    23              60              05  E1  002B8         BBC      #5, (R0), 31$                     ; 1798
                                                    1E  11  002BC         BRB      30$                               ; 1800
                    0C        0C    A6              05  E1  002BE  27$:   BBC      #5, 12(R6), 28$                   ; 1803
                    14        0C    A6              04  E0  002C3         BBS      #4, 12(R6), 30$                   ; 1806
                    12        0C    A6              06  E1  002C8         BBC      #6, 12(R6), 31$                   ; 1807
                                                    0A  11  002CD         BRB      29$                               ;
                    08        0C    A8              06  E0  002CF  28$:   BBS      #6, 12(R8), 30$                   ; 1814
                                            0C      A8  95  002D4         TSTB     12(R8)                            ; 1815
                                                    06  18  002D7         BGEQ     31$                               ;
                                    03              51  E9  002D9  29$:   BLBC     FIRST_FILE, 31$                   ;
                                    63              02  88  002DC  30$:   BISB2    #2, (SMBITM)                      ; 1817
                                                    52  D4  002DF  31$:   CLRL     LAST_FILE                         ; 1823
                                    54              6A  9A  002E1         MOVZBL   (R10), R4                         ; 1824
                                                    54  D6  002E4         INCL     R4                                ;
    54      017A    C6              08              00  ED  002E6         CMPZV    #0, #8, 378(R6), R4               ;
                                                    24  1A  002ED         BGTRU    34$                               ;
                                    54              6B  9A  002EF         MOVZBL   (R11), R4                         ; 1825
                                                    54  D6  002F2         INCL     R4                                ;
    54        44    A7              08              00  ED  002F4         CMPZV    #0, #8, 68(R7), R4                ;
                                                    17  1A  002FA         BGTRU    34$                               ;
                                                    67  D5  002FC         TSTL     (R7)                              ; 1826
                                                    13  12  002FE         BNEQ     34$                               ;
                                            0D      A8  95  00300         TSTB     13(R8)                            ; 1829
                                                    04  18  00303         BGEQ     32$                               ;
                              01    A3              01  88  00305         BISB2    #1, 1(SMBITM)                     ;
                                    04              55  E9  00309  32$:   BLBC     R5, 33$                           ; 1830
                                    63      40      8F  88  0030C         BISB2    #64, (SMBITM)                     ; 1831
                                    52              01  D0  00310  33$:   MOVL     #1, LAST_FILE                     ; 1832
                                    06      01      A0  E9  00313  34$:   BLBC     1(R0), 35$                        ; 1838
                                                    60  95  00317         TSTB     (R0)                              ; 1841
                                                    27  18  00319         BGEQ     39$                               ;
                                                    1F  11  0031B         BRB      37$                               ; 1844
                                    0F      0D      A6  E9  0031D  35$:   BLBC     13(R6), 36$                       ; 1849
                                            0C      A6  95  00321         TSTB     12(R6)                            ; 1852
                                                    16  19  00324         BLSS     37$                               ;
                    17        0D    A6              01  E1  00326         BBC      #1, 13(R6), 39$                   ; 1859
                                    0E              52  E8  0032B         BLBS     LAST_FILE, 37$                    ; 1862
                                                    0F  11  0032E         BRB      38$                               ; 1863
                                    08      0D      A8  E8  00330  36$:   BLBS     13(R8), 37$                       ; 1869
                    09        0D    A8              01  E1  00334         BBC      #1, 13(R8), 39$                   ; 1876
                                    03              52  E9  00339         BLBC     LAST_FILE, 38$                    ; 1879
                                    63              04  88  0033C  37$:   BISB2    #4, (SMBITM)                      ;
                                    63              08  88  0033F  38$:   BISB2    #8, (SMBITM)                      ; 1880
                                    53              04  C0  00342  39$:   ADDL2    #4, SMBITM                        ; 1883
                                    83  002F0004    8F  D0  00345         MOVL     #3080196, (SMBITM)+               ; 1888
                                                    63  D4  0034C         CLRL     (SMBITM)                          ; 1891
                    03        11    A6              02  E1  0034E         BBC      #2, 17(R6), 40$                   ; 1892
                                    63              04  88  00353         BISB2    #4, (SMBITM)                      ;
                                          01AC      C6  B5  00356  40$:   TSTW     428(R6)                           ; 1893
                                                    0A  13  0035A         BEQL     41$                               ;
```

```
                                                          K 12
SYMBIONT         Symbiont communication                   16-Sep-1984 00:37:14    VAX-11 Bliss-32 V4.0-742              Page  32
V04-000                                                   14-Sep-1984 12:37:15    [JOBCTL.SRC]SYMBIONT.B32;1                 (6)

                            07              51 E9 0035C       BLBC    FIRST_FILE, 41$                              ; 1894
                     10     A8              02 88 0035F       BISB2   #2, 16(R8)                                   ; 1897
                            63              02 8A 00363       BICB2   #2, (SMBITM)                                 ; 1898
                            53              04 C0 00366 41$:  ADDL2   #4, SMBITM                                   ; 1900
                            83 002B0004     8F D0 00369       MOVL    #2818052, (SMBITM)+                          ; 1905
                            83     017D     C6 9A 00370       MOVZBL  381(R6), (SMBITM)+                           ; 1908
                                   0134     C6 DD 00375       PUSHL   308(R6)                                      ; 1914
              00000000G     EF              01 FB 00379       CALLS   #1, READ_RECORD                              ;
                            83     00B0     C0 9B 00380       MOVZBW  176(QSMQ), (SMBITM)+                         ; 1915
                            83              2C B0 00385       MOVW    #44, (SMBITM)+                               ; 1916
                            51     00B0     C0 9A 00388       MOVZBL  176(QSMQ), R1                                ; 1919
          63       00B1     C0              51 28 0038D       MOVC3   R1, 177(QSMQ), (SMBITM)                      ; 1921
                                   0134     C6 DD 00393       PUSHL   308(R6)                                      ; 1922
              00000000G     EF              01 FB 00397       CALLS   #1, RELEASE_RECORD                           ;
                            83 00310004     8F D0 0039E       MOVL    #3211268, (SMBITM)+                          ; 1927
                            83     0156     C9 3C 003A5       MOVZWL  342(SFM), (SMBITM)+                          ; 1930
                            83 00350008     8F D0 003AA       MOVL    #3473416, (SMBITM)+                          ; 1936
                            83     013C     C6 7D 003B1       MOVQ    316(R6), (SMBITM)+                           ; 1939
                            83 00360004     8F D0 003B6       MOVL    #3538948, (SMBITM)+                          ; 1945
                            83     015C     C9 9A 003BD       MOVZBL  348(SFM), (SMBITM)+                          ; 1948
                            83 00370004     8F D0 003C2       MOVL    #3604484, (SMBITM)+                          ; 1954
                            83     0144     C6 D0 003C9       MOVL    324(R6), (SMBITM)+                           ; 1957
                            83 0038000C     8F D0 003CE       MOVL    #3670028, (SMBITM)+                          ; 1963
          63       0148     C6              0C 28 003D5       MOVC3   #12, 328(R6), (SMBITM)                       ; 1969
                                            83 D4 003DB       CLRL    (SMBITM)+                                    ; 1974
                     08     AE       0C     AE 9E 003DD       MOVAB   SMBMSG, SMBMSG_DESC+4                        ; 1981
    04    AE                53       08     AE C3 003E2       SUBL3   SMBMSG_DESC+4, SMBITM, SMBMSG_DESC           ; 1982
                                     04     AE 9F 003E8       PUSHAB  SMBMSG_DESC                                  ; 1983
                                            58 DD 003EB       PUSHL   R8                                           ;
                   FBCA     CF              02 FB 003ED       CALLS   #2, SEND_SYMBIONT_MESSAGE                    ;
                     70     A8       00     BE D0 003F2       MOVL    @0(SP), 112(R8)                              ; 1988
                   00EC     C6       14     AC D0 003F7       MOVL    SQR_N, 236(R6)                               ; 1993
                   017B     C6              6A 90 003FD       MOVB    (R10), 379(R6)                               ; 1994
                   0178     C6              6B 90 00402       MOVB    (R11), 376(R6)                               ; 1995
                   00F0     C6       14     AC D0 00407       MOVL    SQR_N, 240(R6)                               ; 1996
                                   0180     C6 9F 0040D       PUSHAB  384(R6)                                      ; 1999
                                            20 DD 00411       PUSHL   #32                                          ;
              00000000G     EF              02 FB 00413       CALLS   #2, DEALLOCATE_VARIABLE_DATA                 ;
                     10     A6              18 88 0041A       BISB2   #24, 16(R6)                                  ; 2001
                                     00     BE DD 0041E       PUSHL   @0(SP)                                       ; 2002
              00000000G     EF              01 FB 00421       CALLS   #1, RELEASE_RECORD                           ;
                                               04 00428       RET                                                  ; 2003

; Routine Size:  1065 bytes,    Routine Base:  CODE + 011A
```

```
1 GLOBAL ROUTINE STOP_SYMBIONT_TASK(SMQ_N,SMQ,SJH_N,SJH): NOVALUE=
1
1 !++
1 !
1 ! FUNCTIONAL DESCRIPTION:
1 !       This routine sends the "stop task" message to a symbiont.
1 !
1 ! INPUT PARAMETERS:
1 !       SMQ_N           - Record number of SMQ.
1 !       SMQ             - Pointer to SMQ.
1 !       SJH_N           - Record number of SJH.
1 !       SJH             - Pointer to SJH.
1 !
1 ! IMPLICIT INPUTS:
1 !       NONE
1 !
1 ! OUTPUT PARAMETERS:
1 !       NONE
1 !
1 ! IMPLICIT OUTPUTS:
1 !       NONE
1 !
1 ! ROUTINE VALUE:
1 !       NONE
1 !
1 ! SIDE EFFECTS:
1 !       NONE
1 !
1 !--
1
2 BEGIN
2 MAP
2       SMQ:            REF BBLOCK,             ! Pointer to SMQ
2       SJH:            REF BBLOCK;             ! Pointer to SJH
2 LOCAL
2       SMBMSG:         BBLOCK[JBC$K_SMBMBXSIZ],! Message buffer
2       SMBITM:         REF BBLOCK,             ! Cursor for message items
2       SMBMSG_DESC:    VECTOR[2];              ! Descriptor for message buffer
2
2
2 ! Message header.
2 !
2 SMBMSG[SMBMSG$W_REQUEST_CODE] = SMBMSG$K_STOP_TASK;
2 SMBMSG[SMBMSG$B_STRUCTURE_LEVEL] = SMBMSG$K_STRUCTURE_LEVEL;
2 SMBMSG[SMBMSG$B_STREAM_INDEX] = .SMQ[SMQ$B_STREAM_INDEX];
2 SMBITM = SMBMSG + SMBMSG$S_REQUEST_HEADER;
2
2
2 ! Reason for stop.
2 !
2 SMBITM[SMBMSG$W_ITEM_SIZE] = 4;
2 SMBITM[SMBMSG$W_ITEM_CODE] = SMBMSG$K_STOP_CONDITION;
2 SMBITM = .SMBITM + SMBMSG$S_ITEM_HEADER;
2 .SMBITM = JBC$_JOBABORT OR STS$K_ERROR;
2 IF .SJH[SJH$V_REQUEUE] THEN .SMBITM = JBC$_JOBREQUEUE OR STS$K_ERROR;
2 SMBITM = .SMBITM + 4;
2
```

```
; 1027          2061  2
; 1028          2062  2  ! Trailing zero item.
; 1029          2063  2  !
; 1030          2064  2  SMBITM[SMBMSG$W_ITEM_SIZE] = 0;
; 1031          2065  2  SMBITM[SMBMSG$W_ITEM_CODE] = 0;
; 1032          2066  2  SMBITM = .SMBITM + SMBMSG$S_ITEM_HEADER;
; 1033          2067  2
; 1034          2068  2
; 1035          2069  2  ! Send the message to the symbiont.
; 1036          2070  2  !
; 1037          2071  2  SMBMSG_DESC[1] = SMBMSG;
; 1038          2072  2  SMBMSG_DESC[0] = .SMBITM - .SMBMSG_DESC[1];
; 1039          2073  2  SEND_SYMBIONT_MESSAGE(.SMQ, SMBMSG_DESC);
; 1040          2074  1  END;



                                        0004 00000          .ENTRY  STOP_SYMBIONT_TASK, Save R2                     ; 2004
                      5E       FBF8  CE   9E 00002          MOVAB   -1032(SP), SP                                   ;
              08      AE             07   B0 00007          MOVW    #7, SMBMSG                                      ; 2046
              0A      AE             01   90 0000B          MOVB    #1, SMBMSG+2                                    ; 2047
                      52         08  AC   D0 0000F          MOVL    SMQ, R2                                         ; 2048
              0B      AE       0117  C2   90 00013          MOVB    279(R2), SMBMSG+3                               ;
                      51         0C  AE   9E 00019          MOVAB   SMBMSG+4, SMBITM                                ; 2049
                      81   00340004  8F   D0 0001D          MOVL    #3407876, (SMBITM)+                             ; 2054
                      61   00048082  8F   D0 00024          MOVL    #295042, (SMBITM)                               ; 2057
                      50         10  AC   D0 0002B          MOVL    SJH, R0                                         ; 2058
                      07         11  A0   E9 0002F          BLBC    17(R0), 1$                                      ;
                      61   000480E2  8F   D0 00033          MOVL    #295138, (SMBITM)                               ;
                      51             04   C0 0003A 1$:      ADDL2   #4, SMBITM                                      ; 2059
                                     81   D4 0003D          CLRL    (SMBITM)+                                       ; 2064
              04      AE         08  AE   9E 0003F          MOVAB   SMBMSG, SMBMSG_DESC+4                           ; 2071
        6E            51         04  AE   C3 00044          SUBL3   SMBMSG_DESC+4, SMBITM, SMBMSG_DESC              ; 2072
                               4004  8F   BB 00049          PUSHR   #^M<R2,SP>                                      ; 2073
            FB41      CF             02   FB 0004D          CALLS   #2, SEND_SYMBIONT_MESSAGE                       ;
                                          04 00052          RET                                                     ; 2074

; Routine Size:  83 bytes,    Routine Base:  CODE + 0543
```

```
1 GLOBAL ROUTINE PAUSE_SYMBIONT_TASK(SMQ_N,SMQ): NOVALUE=
1
1 !++
1 !
1 ! FUNCTIONAL DESCRIPTION:
1 !       This routine sends the "pause task" message to a symbiont.
1 !
1 ! INPUT PARAMETERS:
1 !       SMQ_N           - Record number of SMQ.
1 !       SMQ             - Pointer to SMQ.
1 !
1 ! IMPLICIT INPUTS:
1 !       NONE
1 !
1 ! OUTPUT PARAMETERS:
1 !       NONE
1 !
1 ! IMPLICIT OUTPUTS:
1 !       NONE
1 !
1 ! ROUTINE VALUE:
1 !       NONE
1 !
1 ! SIDE EFFECTS:
1 !       NONE
1 !
1 !--
1
2 BEGIN
2 MAP
2       SMQ:            REF BBLOCK;     ! Pointer to SMQ
2 LOCAL
2       SMBMSG:         BBLOCK[JBC$K_SMBMBXSIZ],! Message buffer
2       SMBITM:         REF BBLOCK,             ! Cursor for message items
2       SMBMSG_DESC:    VECTOR[2];              ! Descriptor for message buffer
2
2
2 ! Message header.
2 !
2 SMBMSG[SMBMSG$W_REQUEST_CODE] = SMBMSG$K_PAUSE_TASK;
2 SMBMSG[SMBMSG$B_STRUCTURE_LEVEL] = SMBMSG$K_STRUCTURE_LEVEL;
2 SMBMSG[SMBMSG$B_STREAM_INDEX] = .SMQ[SMQ$B_STREAM_INDEX];
2 SMBITM = SMBMSG + SMBMSG$S_REQUEST_HEADER;
2
2
2 ! Trailing zero item.
2 !
2 SMBITM[SMBMSG$W_ITEM_SIZE] = 0;
2 SMBITM[SMBMSG$W_ITEM_CODE] = 0;
2 SMBITM = .SMBITM + SMBMSG$S_ITEM_HEADER;
2
2
2 ! Send the message to the symbiont.
2 !
2 SMBMSG_DESC[1] = SMBMSG;
2 SMBMSG_DESC[0] = .SMBITM - .SMBMSG_DESC[1];
2 SEND_SYMBIONT_MESSAGE(.SMQ, SMBMSG_DESC);
```

```
; 1099          2132  2
; 1100          2133  2
; 1101          2134  2 ! Update SMQ.
; 1102          2135  2 !
; 1103          2136  2 SMQ[SMQ$V_PAUSING] = TRUE;
; 1104          2137  1 END;



                                          0004 00000          .ENTRY  PAUSE_SYMBIONT_TASK, Save R2                    ; 2075
                         5E       FC00  CE  9E 00002          MOVAB   -1024(SP), SP                                   ;
                         6E              01  B0 00007          MOVW    #1, SMBMSG                                      ; 2114
                    02   AE              01  90 0000A          MOVB    #1, SMBMSG+2                                    ; 2115
                         52         08  AC  D0 0000E          MOVL    SMQ, R2                                         ; 2116
                    03   AE       0117  C2  90 00012          MOVB    279(R2), SMBMSG+3                               ;
                         50         04  AE  9E 00018          MOVAB   SMBMSG+4, SMBITM                                ; 2117
                                         80  D4 0001C          CLRL    (SMBITM)+                                       ; 2122
                                         5E  DD 0001E          PUSHL   SP                                              ; 2129
           7E            50              6E  C3 00020          SUBL3   SMBMSG_DESC+4, SMBITM, SMBMSG_DESC              ; 2130
                                  4004  8F  BB 00024          PUSHR   #^M<R2,SP>                                      ; 2131
                  FB13   CF              02  FB 00028          CALLS   #2, SEND_SYMBIONT_MESSAGE                       ;
                    10   A2              08  88 0002D          BISB2   #8, 16(R2)                                      ; 2136
                                             04 00031          RET                                                     ; 2137

; Routine Size:  50 bytes,    Routine Base:  CODE + 0596
```

```
1 GLOBAL ROUTINE RESUME_SYMBIONT_TASK(SMQ_N,SMQ,FLAGS,ALIGNMENT_PAGES,RELATIVE_PAGE,SEARCH_LENGTH,SEARCH_ADDRE
1
1 !++
1 !
1 ! FUNCTIONAL DESCRIPTION:
1 !       This routine sends the "resume task" message to a symbiont.
1 !
1 ! INPUT PARAMETERS:
1 !       SMQ_N            - Record number of SMQ.
1 !       SMQ              - Pointer to SMQ.
1 !       FLAGS            - Resume control flags.
1 !       ALIGNMENT_PAGES  - Number of alignment pages (or 0).
1 !       RELATIVE_PAGE    - Relative page position (or 0).
1 !       SEARCH_LENGTH    - Descriptor for search string (or 0).
1 !       SEARCH_ADDRESS   -
1 !
1 ! IMPLICIT INPUTS:
1 !       NONE
1 !
1 ! OUTPUT PARAMETERS:
1 !       NONE
1 !
1 ! IMPLICIT OUTPUTS:
1 !       NONE
1 !
1 ! ROUTINE VALUE:
1 !       NONE
1 !
1 ! SIDE EFFECTS:
1 !       NONE
1 !
1 !--
1
2 BEGIN
2 MAP
2       SMQ:            REF BBLOCK,      ! Pointer to SMQ
2       FLAGS:          BBLOCK;          ! Resume control flags
2 LOCAL
2       SMBMSG:         BBLOCK[JBC$K_SMBMBXSIZ],! Message buffer
2       SMBITM:         REF BBLOCK,             ! Cursor for message items
2       SMBMSG_DESC:    VECTOR[2];              ! Descriptor for message buffer
2
2
2 ! Message header.
2 !
2 SMBMSG[SMBMSG$W_REQUEST_CODE] = SMBMSG$K_RESUME_TASK;
2 SMBMSG[SMBMSG$B_STRUCTURE_LEVEL] = SMBMSG$K_STRUCTURE_LEVEL;
2 SMBMSG[SMBMSG$B_STREAM_INDEX] = .SMQ[SMQ$B_STREAM_INDEX];
2 SMBITM = SMBMSG + SMBMSG$S_REQUEST_HEADER;
2
2
2 ! Alignment pages.
2 !
2 IF .ALIGNMENT_PAGES NEQ 0
2 THEN
3     BEGIN
3     SMBITM[SMBMSG$W_ITEM_SIZE] = 4;
```

```
3	    SMBITM[SMBMSG$W_ITEM_CODE] = SMBMSG$K_ALIGNMENT_PAGES;
3	    SMBITM = .SMBITM + SMBMSG$S_ITEM_HEADER;
3	    .SMBITM = .ALIGNMENT_PAGES;
3	    SMBITM = .SMBITM + 4;
2	    END;
2
2
2	! File repositioning.
2	!
2	IF .RELATIVE_PAGE NEQ 0
2	THEN
3	    BEGIN
3	    SMBITM[SMBMSG$W_ITEM_SIZE] = 4;
3	    SMBITM[SMBMSG$W_ITEM_CODE] = SMBMSG$K_RELATIVE_PAGE;
3	    SMBITM = .SMBITM + SMBMSG$S_ITEM_HEADER;
3	    .SMBITM = .RELATIVE_PAGE;
3	    SMBITM = .SMBITM + 4;
2	    END;
2
2
2	! Request control flags.
2	!
2	IF .FLAGS NEQ 0 OR .ALIGNMENT_PAGES NEQ 0
2	THEN
3	    BEGIN
3	    SMBITM[SMBMSG$W_ITEM_SIZE] = 4;
3	    SMBITM[SMBMSG$W_ITEM_CODE] = SMBMSG$K_REQUEST_CONTROL;
3	    SMBITM = .SMBITM + SMBMSG$S_ITEM_HEADER;
3	    .SMBITM = 0;
3	    IF .FLAGS[ISRV_V_ALIGNMENT_MASK]
3	        THEN SMBITM[SMBMSG$V_ALIGNMENT_MASK] = TRUE;
3	    IF .ALIGNMENT_PAGES NEQ 0
3	        THEN SMBITM[SMBMSG$V_PAUSE_COMPLETE] = TRUE;
3	    IF .FLAGS[ISRV_V_TOP_OF_FILE]
3	        THEN SMBITM[SMBMSG$V_TOP_OF_FILE] = TRUE;
3	    SMBITM = .SMBITM + 4;
2	    END;
2
2
2	! Search string.
2	!
2	IF .SEARCH_LENGTH NEQ 0
2	THEN
3	    BEGIN
3	    SMBITM[SMBMSG$W_ITEM_SIZE] = .SEARCH_LENGTH;
3	    SMBITM[SMBMSG$W_ITEM_CODE] = SMBMSG$K_SEARCH_STRING;
3	    SMBITM = .SMBITM + SMBMSG$S_ITEM_HEADER;
3	    MOVC3(
3	        .SEARCH_LENGTH,
3	        .SEARCH_ADDRESS,
3	        .SMBITM; ..., SMBITM);
2	    END;
2
2
2	! Trailing zero item.
2	!
2	SMBITM[SMBMSG$W_ITEM_SIZE] = 0;
```

```
; 1220          2252  2 SMBITM[SMBMSG$W_ITEM_CODE] = 0;
; 1221          2253  2 SMBITM = .SMBITM + SMBMSG$S_ITEM_HEADER;
; 1222          2254  2
; 1223          2255  2
; 1224          2256  2 ! Send the message to the symbiont.
; 1225          2257  2 !
; 1226          2258  2 SMBMSG_DESC[1] = SMBMSG;
; 1227          2259  2 SMBMSG_DESC[0] = .SMBITM - .SMBMSG_DESC[1];
; 1228          2260  2 SEND_SYMBIONT_MESSAGE(.SMQ, SMBMSG_DESC);
; 1229          2261  2
; 1230          2262  2
; 1231          2263  2 ! Update SMQ.
; 1232          2264  2 !
; 1233          2265  2 SMQ[SMQ$V_RESUMING] = TRUE;
; 1234          2266  2 IF .ALIGNMENT_PAGES NEQ 0 THEN SMQ[SMQ$V_ALIGNING] = TRUE;
; 1235          2267  1 END;



                                        00FC 00000          .ENTRY  RESUME_SYMBIONT_TASK, Save R2,R3,R4,R5,R6,- ; 2138
                                                                    R7                                          ;
                      5E      FBF8   CE   9E 00002          MOVAB   -1032(SP), SP                               ;
               08     AE             03   B0 00007          MOVW    #3, SMBMSG                                  ; 2183
               0A     AE             01   90 0000B          MOVB    #1, SMBMSG+2                                ; 2184
                      56        08   AC   D0 0000F          MOVL    SMQ, R6                                     ; 2185
               0B     AE      0117   C6   90 00013          MOVB    279(R6), SMBMSG+3                           ;
                      53        0C   AE   9E 00019          MOVAB   SMBMSG+4, SMBITM                            ; 2186
                                     57   D4 0001D          CLRL    R7                                          ; 2191
                                10   AC   D5 0001F          TSTL    ALIGNMENT_PAGES                             ;
                                     0D   13 00022          BEQL    1$                                          ;
                                     57   D6 00024          INCL    R7                                          ;
                      83 00040004    8F   D0 00026          MOVL    #262148, (SMBITM)+                          ; 2194
                      83        10   AC   D0 0002D          MOVL    ALIGNMENT_PAGES, (SMBITM)+                  ; 2197
                                14   AC   D5 00031 1$:      TSTL    RELATIVE_PAGE                               ; 2204
                                     0B   13 00034          BEQL    2$                                          ;
                      83 002E0004    8F   D0 00036          MOVL    #3014660, (SMBITM)+                         ; 2207
                      83        14   AC   D0 0003D          MOVL    RELATIVE_PAGE, (SMBITM)+                    ; 2210
                                0C   AC   D5 00041 2$:      TSTL    FLAGS                                       ; 2217
                                     03   12 00044          BNEQ    3$                                          ;
                      21             57   E9 00046          BLBC    R7, 7$                                      ;
                      83 002F0004    8F   D0 00049 3$:      MOVL    #3080196, (SMBITM)+                         ; 2220
                                     63   D4 00050          CLRL    (SMBITM)                                    ; 2223
                      03        0C   AC   E9 00052          BLBC    FLAGS, 4$                                   ; 2224
                      63             01   88 00056          BISB2   #1, (SMBITM)                                ; 2225
                      03             57   E9 00059 4$:      BLBC    R7, 5$                                      ; 2226
                      63             02   88 0005C          BISB2   #2, (SMBITM)                                ; 2227
        03     0C     AC             01   E1 0005F 5$:      BBC     #1, FLAGS, 6$                               ; 2228
                      63             08   88 00064          BISB2   #8, (SMBITM)                                ; 2229
                      53             04   C0 00067 6$:      ADDL2   #4, SMBITM                                  ; 2230
                                18   AC   D5 0006A 7$:      TSTL    SEARCH_LENGTH                               ; 2236
                                     0D   13 0006D          BEQL    8$                                          ;
                      83        18   AC   B0 0006F          MOVW    SEARCH_LENGTH, (SMBITM)+                    ; 2239
                      83             32   B0 00073          MOVW    #50, (SMBITM)+                              ; 2240
        63     1C     BC        18   AC   28 00076          MOVC3   SEARCH_LENGTH, @SEARCH_ADDRESS, (SMBITM)    ; 2245
                                     83   D4 0007C 8$:      CLRL    (SMBITM)+                                   ; 2251
```

```
                        04    AE        08    AE   9E 0007E          MOVAB   SMBMSG, SMBMSG_DESC+4                              ; 2258
             6E               53        04    AE   C3 00083          SUBL3   SMBMSG_DESC+4, SMBITM, SMBMSG_DESC                 ; 2259
                                      4040    8F   BB 00088          PUSHR   #^M<R6,SP>                                         ; 2260
                      FA7D    CF              02   FB 0008C          CALLS   #2, SEND_SYMBIONT_MESSAGE                          ;
                        10    A6        40    8F   88 00091          BISB2   #64, 16(R6)                                        ; 2265
                              04              57   E9 00096          BLBC    R7, 9$                                             ; 2266
                        10    A6              01   88 00099          BISB2   #1, 16(R6)                                         ;
                                                   04 0009D 9$:      RET                                                        ; 2267

; Routine Size:  158 bytes,    Routine Base:  CODE + 05C8
```

```
1 GLOBAL ROUTINE START_SYMBIONT_STREAM(SMQ_N,SMQ)=
1
1 !++
1 !
1 ! FUNCTIONAL DESCRIPTION:
1 !       This routine starts a symbiont stream.  If necessary, it creates a
1 !       symbiont process and then sends the "start stream" message.
1 !
1 ! INPUT PARAMETERS:
1 !       SMQ_N           - Record number of SMQ.
1 !       SMQ             - Pointer to SMQ.
1 !
1 ! IMPLICIT INPUTS:
1 !       NONE
1 !
1 ! OUTPUT PARAMETERS:
1 !       NONE
1 !
1 ! IMPLICIT OUTPUTS:
1 !       NONE
1 !
1 ! ROUTINE VALUE:
1 !       Completion status.
1 !
1 ! SIDE EFFECTS:
1 !       NONE
1 !
1 !--
1
2 BEGIN
2 MAP
2       SMQ:            REF BBLOCK;     ! Pointer to SMQ
2 LOCAL
2       SCT:            REF BBLOCK,     ! Pointer to SCT
2       STM,                            ! Stream index
2       PRCNAM_BUFFER:  VECTOR[15,BYTE],! Buffer for process name
2       PRCNAM_DESC:    VECTOR[2],      ! Descriptor for process name
2       PRCNAM,                         ! Process name parameter
2       IMAGE_BUFFER:   VECTOR[63,BYTE],! Buffer for image name
2       IMAGE_DESC:     VECTOR[2],      ! Descriptor for image name
2       MAILBOX_BUFFER: VECTOR[30,BYTE],! Buffer for mailbox name
2       MAILBOX_DESC:   VECTOR[2],      ! Descriptor for mailbox name
2       GETDVI_LIST:    BBLOCK[16],     ! $GETDVI item list
2       IOSB:           VECTOR[4,WORD], ! I/O status block
2       STATUS_1,                       ! Status return
2       STATUS_2,                       ! Status return
2       STATUS_3,                       ! Status return
2       SMBMSG:         BBLOCK[JBC$K_SMBMBXSIZ],! Message buffer
2       SMBITM:         REF BBLOCK,             ! Cursor for message items
2       SMBMSG_DESC:    VECTOR[2];              ! Descriptor for message buffer
2
2
2 OWN
2       PRIVILEGE_MASK: BBLOCK[8]       ! Symbiont privileges
2           PSECT(CODE) PRESET(
2               [PRV$V_SETPRV] = TRUE);
2
```

```
  2
  2 ! Find a suitable symbiont.
  2 !
  2 SCT = .SYMBIONT_CONTROL;
  2 WHILE .SCT NEQ 0 DO
  3     BEGIN
  3
  3     ! Locate a symbiont that is executing the desired image, that is not
  3     ! deleting itself, and has an available stream.
  3     !
  3     IF CH$EQL(
  3         CH$RCHAR(SMQ[SMQ$T_PROCESSOR]),
  3         SMQ[SMQ$T_PROCESSOR] + 1,
  3         CH$RCHAR(SCT[SCT_T_PROCESSOR]),
  3         SCT[SCT_T_PROCESSOR] + 1)
  3     AND NOT .SCT[SCT_V_DELETING]
  3     AND NOT FFC(
  3         %REF(0), %REF(.SCT[SCT_B_MAXSTREAMS]), SCT[SCT_L_BITMAP], STM)
  3     THEN
  3         EXITLOOP;
  3
  3
  3     ! Advance to next.
  3     !
  3     SCT = .SCT[SCT_L_FLINK];
  2     END;
  2
  2
  2 ! No suitable symbiont found; create a new one.
  2 !
  2 IF .SCT EQL 0
  2 THEN
  3     BEGIN
  3     SCT = ALLOCATE_MEMORY();
  3     SCT[SCT_L_FLINK] = .SYMBIONT_CONTROL;
  3     SCT[SCT_B_MAXSTREAMS] = SCT_K_MAXSTREAMS;
  3     CH$MOVE(
  3         SMQ$S_PROCESSOR,
  3         SMQ[SMQ$T_PROCESSOR],
  3         SCT[SCT_T_PROCESSOR]);
  3     SYMBIONT_CONTROL = .SCT;
  3     STM = 0;
  2     END;
  2
  2
  2 ! Create a symbiont process if needed.
  2 !
  2 IF .SCT[SCT_L_BITMAP] EQL 0
  2 THEN
  3     BEGIN
  3
  3     ! Set up the process name as "SYMBIONT_nnnn".
  3     !
  3     PRCNAM_DESC[0] = %ALLOCATION(PRCNAM_BUFFER);
  3     PRCNAM_DESC[1] = PRCNAM_BUFFER;
  3     SYMBIONT_COUNT = .SYMBIONT_COUNT + 1;
P 3     $FAO(
            $DESCRIPTOR('SYMBIONT_!4ZL'),
            PRCNAM_DESC,
            PRCNAM_DESC,
            .SYMBIONT_COUNT);

        ! Set up the image name as "SYS$SYSTEM:name.EXE".
        !
        IMAGE_DESC[0] = %ALLOCATION(IMAGE_BUFFER);
        IMAGE_DESC[1] = IMAGE_BUFFER;
        $FAO(
            $DESCRIPTOR('SYS$SYSTEM:!AC.EXE'),
            IMAGE_DESC,
            IMAGE_DESC,
            (IF CH$RCHAR(SMQ[SMQ$T_PROCESSOR]) EQL 0
                THEN UPLIT BYTE (%ASCIC 'PRTSMB')
                ELSE SMQ[SMQ$T_PROCESSOR]));

        ! Create the symbiont input mailbox.
        !
        STATUS_1 = $CREMBX(
            CHAN=SCT[SCT_W_MAILBOX],
            MAXMSG=JBC$K_SMBMBXSIZ,
            BUFQUO=JBC$K_SMBMBXSIZ,
            PROMSK=%B'1111111100000000');   ! S:RWED, O:RWED, G, W
        IF NOT .STATUS_1
        THEN
            BEGIN
            SYMBIONT_CONTROL = .SCT[SCT_L_FLINK];
            DEALLOCATE_MEMORY(.SCT);
            RETURN .STATUS_1;
            END;

        ! Get a descriptor for the mailbox device name.
        !
        MAILBOX_DESC[0] = 0;
        MAILBOX_DESC[1] = MAILBOX_BUFFER;
        GETDVI_LIST[0,0,16,0] = %ALLOCATION(MAILBOX_BUFFER);
        GETDVI_LIST[2,0,16,0] = DVI$_DEVNAM;
        GETDVI_LIST[4,0,32,0] = MAILBOX_BUFFER;
        GETDVI_LIST[8,0,32,0] = MAILBOX_DESC;
        GETDVI_LIST[12,0,32,0] = 0;
        STATUS_2 = $GETDVIW(
            EFN=JBC$K_SYNC_EFN,
            CHAN=.SCT[SCT_W_MAILBOX],
            ITMLST=GETDVI_LIST,
            IOSB=IOSB);
        IF NOT .STATUS_2
        THEN
            BEGIN
            $DASSGN(CHAN=.SCT[SCT_W_MAILBOX]);
            SYMBIONT_CONTROL = .SCT[SCT_L_FLINK];
            DEALLOCATE_MEMORY(.SCT);
            RETURN .STATUS_2;
            END;
```

```
  3
  3
  3        ! The following loop is executed at most twice.
  3        !
  3        PRCNAM = PRCNAM_DESC;
  3        WHILE TRUE DO
  4            BEGIN
  4
  4            ! Create the symbiont process.
  4            !
P 4            STATUS_3 = $CREPRC(
P 4                PIDADR=SCT[SCT_L_PID],
P 4                IMAGE=IMAGE_DESC,
P 4                INPUT=MAILBOX_DESC,
P 4                OUTPUT=JOBCTLMBX_DESC,
P 4                ERROR=NLA0_DESC,
P 4                PRVADR=PRIVILEGE_MASK,
P 4                QUOTA=JBC_QUOTAS,
P 4                PRCNAM=.PRCNAM,
P 4                BASPRI=.SMQ[SMQ$B_BASE_PRIORITY],
P 4                STSFLG=.IMAGE_DUMP_STSFLG,
  4                UIC=.JBC_UIC);
  4
  4            IF NOT .STATUS_3
  4            THEN
  5                BEGIN
  5
  5                ! Create failed.  If the status is not "duplicate process name", or
  5                ! if a create has already been tried with no name, give up.
  5                ! Otherwise, loop to try creation with no name.
  5                !
  5                IF .STATUS_3<0,16> NEQ SS$_DUPLNAM OR .PRCNAM EQL 0
  5                THEN
  6                    BEGIN
  6                    $DASSGN(CHAN=.SCT[SCT_W_MAILBOX]);
  6                    SYMBIONT_CONTROL = .SCT[SCT_L_FLINK];
  6                    DEALLOCATE_MEMORY(.SCT);
  6                    SCAN_INCOMPLETE_SERVICES(ISRV_K_PURGE_SMQ, .SMQ_N);
  6                    RETURN .STATUS_3;
  5                    END;
  5                PRCNAM = 0;
  5                END
  4            ELSE
  5                BEGIN
  5                ENTER_PROCESS_DATA(PDE_K_SYMBIONT, .SCT[SCT_L_PID]);
  5                QUEUE_REFERENCE_COUNT = .QUEUE_REFERENCE_COUNT + 1;
  5                EXITLOOP;
  4                END;
  3            END;
  2        END;
  2
  2
  2    ! Update SMQ.
  2    !
  2    SMQ[SMQ$L_STREAM_SCT] = .SCT;
  2    SMQ[SMQ$B_STREAM_INDEX] = .STM;
  2    SMQ[SMQ$V_STARTING] = TRUE;
```

```
2 SMQ[SMQ$V_STOPPED] = FALSE;
2
2
2 ! Update SCT.
2 !
2 BITVECTOR[SCT[SCT_L_BITMAP], .STM] = TRUE;
2 VECTOR[SCT[SCT_L_QUEUES], .STM] = .SMQ_N;
2
2
2 ! Message header for the "start stream" command.
2 !
2 SMBMSG[SMBMSG$W_REQUEST_CODE] = SMBMSG$K_START_STREAM;
2 SMBMSG[SMBMSG$B_STRUCTURE_LEVEL] = SMBMSG$K_STRUCTURE_LEVEL;
2 SMBMSG[SMBMSG$B_STREAM_INDEX] = .SMQ[SMQ$B_STREAM_INDEX];
2 SMBITM = SMBMSG + SMBMSG$S_REQUEST_HEADER;
2
2
2 ! Device name.
2 !
2 IF CH$RCHAR(SMQ[SMQ$T_DEVICE_NAME]) EQL 0
2 THEN
3     BEGIN
3     SMBITM[SMBMSG$W_ITEM_SIZE] = CH$RCHAR(SMQ[SMQ$T_NAME]);
3     SMBITM[SMBMSG$W_ITEM_CODE] = SMBMSG$K_DEVICE_NAME;
3     SMBITM = .SMBITM + SMBMSG$S_ITEM_HEADER;
3     MOVC3(
3         %REF(CH$RCHAR(SMQ[SMQ$T_NAME])),
3         SMQ[SMQ$T_NAME] + 1,
3         .SMBITM; ,,, SMBITM);
3     END
2 ELSE
3     BEGIN
3     SMBITM[SMBMSG$W_ITEM_SIZE] = CH$RCHAR(SMQ[SMQ$T_DEVICE_NAME]);
3     SMBITM[SMBMSG$W_ITEM_CODE] = SMBMSG$K_DEVICE_NAME;
3     SMBITM = .SMBITM + SMBMSG$S_ITEM_HEADER;
3     MOVC3(
3         %REF(CH$RCHAR(SMQ[SMQ$T_DEVICE_NAME])),
3         SMQ[SMQ$T_DEVICE_NAME] + 1,
3         .SMBITM; ,,, SMBITM);
3     END;
2
2
2 ! Queue name.
2 !
2 SMBITM[SMBMSG$W_ITEM_SIZE] = CH$RCHAR(SMQ[SMQ$T_NAME]);
2 SMBITM[SMBMSG$W_ITEM_CODE] = SMBMSG$K_EXECUTOR_QUEUE;
2 SMBITM = .SMBITM + SMBMSG$S_ITEM_HEADER;
2 MOVC3(
2     %REF(CH$RCHAR(SMQ[SMQ$T_NAME])),
2     SMQ[SMQ$T_NAME] + 1,
2     .SMBITM; ,,, SMBITM);
2
2
2 ! Job reset modules.
2 !
2 SMBITM = FETCH_VARIABLE_ITEM(
2     SMQ$S_JOB_RESET_MODULES, SMQ[SMQ$T_JOB_RESET_MODULES],
2          SMBMSG$K_JOB_RESET_MODULES,
2          .SMBITM);
2
2
2      ! Device control library name.
2      !
2      SMBITM[SMBMSG$W_ITEM_SIZE] = %CHARCOUNT('SYS$LIBRARY:.TLB') + CH$RCHAR(SMQ[SMQ$T_LIBRARY]);
2      IF CH$RCHAR(SMQ[SMQ$T_LIBRARY]) EQL 0 THEN SMBITM[SMBMSG$W_ITEM_SIZE] = %CHARCOUNT('SYS$LIBRARY:SYSDEVCTL.TL
2      SMBITM[SMBMSG$W_ITEM_CODE] = SMBMSG$K_LIBRARY_SPECIFICATION;
2      SMBITM = .SMBITM + SMBMSG$S_ITEM_HEADER;
2      MOVC3(
2          %REF(%CHARCOUNT('SYS$LIBRARY:')),
2          UPLIT BYTE('SYS$LIBRARY:'),
2          .SMBITM; ... SMBITM);
2      IF CH$RCHAR(SMQ[SMQ$T_LIBRARY]) EQL 0
2      THEN
2          MOVC3(
2              %REF(%CHARCOUNT('SYSDEVCTL')),
2              UPLIT BYTE ('SYSDEVCTL'),
2              .SMBITM; ... SMBITM)
2      ELSE
2          MOVC3(
2              %REF(CH$RCHAR(SMQ[SMQ$T_LIBRARY])),
2              SMQ[SMQ$T_LIBRARY] + 1,
2              .SMBITM; ... SMBITM);
2      .SMBITM = '.TLB';
2      SMBITM = .SMBITM + 4;
2
2
2      ! Trailing zero item.
2      !
2      SMBITM[SMBMSG$W_ITEM_SIZE] = 0;
2      SMBITM[SMBMSG$W_ITEM_CODE] = 0;
2      SMBITM = .SMBITM + SMBMSG$S_ITEM_HEADER;
2
2
2      ! Send the message to the symbiont.
2      !
2      SMBMSG_DESC[1] = SMBMSG;
2      SMBMSG_DESC[0] = .SMBITM - .SMBMSG_DESC[1];
2      SEND_SYMBIONT_MESSAGE(.SMQ, SMBMSG_DESC);
2
2
2      SS$_NORMAL
1      END;


                                                     00666                .BLKB    2
                                                00   00668 PRIVILEGE_MASK:
                                                                          .BYTE    0                                      :
                                                40   00669                .BYTE    64                                     :
                                                     0066A                .BLKB    6
  4C  5A  34  21  5F  54  4E  4F  49  42  4D  59  53  00670 P.AAB:        .ASCII   \SYMBIONT_!4ZL\                        :
                                                     0067D                .BLKB    3
                                         0000000D    00680 P.AAA:         .LONG    13                                     :
                                         00000000'   00684                .ADDRESS P.AAB                                  :
```

```
  2E  43  41  21  3A  4D  45  54  53  59  53  24  53  59  53 00688 P.AAD:  .ASCII   \SYS$SYSTEM:!AC.EXE\                         ;
                                                  45  58  45 00697                                                               ;
                                                             0069A          .BLKB    2
                                                    00000012 0069C P.AAC:  .LONG    18                                          ;
                                                    00000000' 006A0        .ADDRESS P.AAD                                       ;
                                  42  4D  53  54  52  50  06 006A4 P.AAE:  .ASCII   <6>\PRTSMB\                                 ;
              3A  59  52  41  52  42  49  4C  24  53  59  53 006AB P.AAF:  .ASCII   \SYS$LIBRARY:\                              ;
                          4C  54  43  56  45  44  53  59  53 006B7 P.AAG:  .ASCII   \SYSDEVCTL\                                 ;

                                                                           .EXTRN   SYS$FAO, SYS$CREMBX
                                                                           .EXTRN   SYS$GETDVIW, SYS$DASSGN
                                                                           .EXTRN   SYS$CREPRC

                                                        0FFC 00000          .ENTRY   START_SYMBIONT_STREAM, Save R2,R3,R4,R5,R6,-; 2268
                                                                                     R7,R8,R9,R10,R11                           ;
                                          5B      BB  AF  9E 00002          MOVAB    P.AAA, R11                                 ;
                                          5A 00000000'  EF  9E 00006        MOVAB    SYMBIONT_CONTROL, R10                      ;
                                          5E    FB58  CE  9E 0000D          MOVAB    -1192(SP), SP                              ;
                                          56          6A  D0 00012          MOVL     SYMBIONT_CONTROL, SCT                      ; 2328
                                          57      08  AC  D0 00015          MOVL     SMQ, R7                                    ; 2336
                                          59    00D4  C7  9E 00019          MOVAB    212(R7), R9                                ;
                                                      56  D5 0001E 1$:      TSTL     SCT                                        ; 2329
                                                      24  13 00020          BEQL     3$                                         ;
                                          51          69  9A 00022          MOVZBL   (R9), R1                                   ; 2336
                                          50      14  A6  9A 00025          MOVZBL   20(SCT), R0                                ; 2338
              50              00        00D5  C7          51  2D 00029      CMPC5    R1, 213(R7), #0, R0, 21(SCT)               ;
                                                  15  A6     00030                                                              ;
                                                      0D  12 00032          BNEQ     2$                                         ;
                                          09      04  A6  E8 00034          BLBS     4(SCT), 2$                                 ; 2340
              58      0C  A6          05  A6          00  EB 00038          FFC      #0, 5(SCT), 12(SCT), STM                   ; 2342
                                                      05  12 0003F          BNEQ     3$                                         ;
                                          56          66  D0 00041 2$:      MOVL     (SCT), SCT                                 ; 2349
                                                      D8  11 00044          BRB      1$                                         ; 2329
                                                      56  D5 00046 3$:      TSTL     SCT                                        ; 2355
                                                      1B  12 00048          BNEQ     4$                                         ;
                               00000000G  EF          00  FB 0004A          CALLS    #0, ALLOCATE_MEMORY                        ; 2358
                                          56          50  D0 00051          MOVL     R0, SCT                                    ;
                                          66          6A  D0 00054          MOVL     SYMBIONT_CONTROL, (SCT)                    ; 2359
                                      05  A6          20  90 00057          MOVB     #32, 5(SCT)                                ; 2360
                      14  A6              69          28  28 0005B          MOVC3    #40, (R9), 20(SCT)                         ; 2364
                                          6A          56  D0 00060          MOVL     SCT, SYMBIONT_CONTROL                      ; 2365
                                                      58  D4 00063          CLRL     STM                                        ; 2366
                                                  0C  A6  D5 00065 4$:      TSTL     12(SCT)                                    ; 2372
                                                      03  13 00068          BEQL     5$                                         ;
                                                    0149  31 0006A          BRW      14$                                        ;
                                      E8  AD          0F  D0 0006D 5$:      MOVL     #15, PRCNAM_DESC                           ; 2378
                                      EC  AD      F0  AD  9E 00071          MOVAB    PRCNAM_BUFFER, PRCNAM_DESC+4               ; 2379
                                                  A4  AA  D6 00076          INCL     SYMBIONT_COUNT                             ; 2380
                                                  A4  AA  DD 00079          PUSHL    SYMBIONT_COUNT                             ; 2385
                                                  E8  AD  9F 0007C          PUSHAB   PRCNAM_DESC                                ;
                                                  E8  AD  9F 0007F          PUSHAB   PRCNAM_DESC                                ;
                                                      5B  DD 00082          PUSHL    R11                                        ;
                               00000000G  00          04  FB 00084          CALLS    #4, SYS$FAO                                ;
                                      A0  AD          3F  D0 0008B          MOVL     #63, IMAGE_DESC                            ; 2390
                                      A4  AD      A8  AD  9E 0008F          MOVAB    IMAGE_BUFFER, IMAGE_DESC+4                 ; 2391
                                                      69  95 00094          TSTB     (R9)                                       ; 2398
                                                      08  12 00096          BNEQ     6$                                         ;
              50         24  AB  9E 00098         MOVAB   P.AAE, R0
                             50  DD 0009C         PUSHL   R0
                             02  11 0009E         BRB     7$
                             59  DD 000A0 6$:     PUSHL   R9
                         A0  AD  9F 000A2 7$:     PUSHAB  IMAGE_DESC
                         A0  AD  9F 000A5         PUSHAB  IMAGE_DESC
                         1C  AB  9F 000A8         PUSHAB  P.AAC
   00000000G  00             04  FB 000AB         CALLS   #4, SYS$FAO
                             7E  7C 000B2         CLRQ    -(SP)                            ; 2407
              7E       FF00  8F  3C 000B4         MOVZWL  #65280, -(SP)
              7E       0400  8F  3C 000B9         MOVZWL  #1024, -(SP)
              7E       0400  8F  3C 000BE         MOVZWL  #1024, -(SP)
                         06  A6  9F 000C3         PUSHAB  6(SCT)
                             7E  D4 000C6         CLRL    -(SP)
   00000000G  00             07  FB 000C8         CALLS   #7, SYS$CREMBX
              52             50  D0 000CF         MOVL    R0, STATUS_1
              4C             52  E9 000D2         BLBC    STATUS_1, 8$                     ; 2408
                       FF74  CD  7C 000D5         CLRQ    GETDVI_LIST+12                   ; 2425
        FF7C  CD         80  AD  9E 000D9         MOVAB   MAILBOX_BUFFER, MAILBOX_DESC+4   ; 2420
        FF68  CD   0020001E  8F  D0 000DF         MOVL    #2097182, GETDVI_LIST            ; 2421
        FF6C  CD         80  AD  9E 000E8         MOVAB   MAILBOX_BUFFER, GETDVI_LIST+4    ; 2423
        FF70  CD       FF78  CD  9E 000EE         MOVAB   MAILBOX_DESC, GETDVI_LIST+8      ; 2424
                             7E  7C 000F5         CLRQ    -(SP)                            ; 2430
                             7E  D4 000F7         CLRL    -(SP)
                       FF60  CD  9F 000F9         PUSHAB  IOSB
                       FF68  CD  9F 000FD         PUSHAB  GETDVI_LIST
                             7E  D4 00101         CLRL    -(SP)
              7E         06  A6  3C 00103         MOVZWL  6(SCT), -(SP)
                             01  DD 00107         PUSHL   #1
   00000000G  00             08  FB 00109         CALLS   #8, SYS$GETDVIW
              52             50  D0 00110         MOVL    R0, STATUS_2
              1B             52  E8 00113         BLBS    STATUS_2, 9$                     ; 2431
              7E         06  A6  3C 00116         MOVZWL  6(SCT), -(SP)                    ; 2434
   00000000G  00             01  FB 0011A         CALLS   #1, SYS$DASSGN
              6A             66  D0 00121 8$:     MOVL    (SCT), SYMBIONT_CONTROL          ; 2435
                             56  DD 00124         PUSHL   SCT                              ; 2436
   00000000G  EF             01  FB 00126         CALLS   #1, DEALLOCATE_MEMORY
              50             52  D0 0012D         MOVL    STATUS_2, R0                     ; 2437
                                 04 00130         RET
              52         E8  AD  9E 00131 9$:     MOVAB   PRCNAM_DESC, PRCNAM              ; 2443
                             7E  D4 00135 10$:    CLRL    -(SP)                            ; 2460
                       FF74  CA  DD 00137         PUSHL   IMAGE_DUMP_STSFLG
                             7E  D4 0013B         CLRL    -(SP)
                       0080  CA  DD 0013D         PUSHL   JBC_UIC
              7E       0114  C7  9A 00141         MOVZBL  276(R7), -(SP)
                             52  DD 00146         PUSHL   PRCNAM
                         3C  AA  9F 00148         PUSHAB  JBC_QUOTAS
                         E8  AB  9F 0014B         PUSHAB  PRIVILEGE_MASK
                  00000000G  EF  9F 0014E         PUSHAB  NLA0_DESC
                  00000000G  EF  9F 00154         PUSHAB  JOBCTLMBX_DESC
                       FF78  CD  9F 0015A         PUSHAB  MAILBOX_DESC
                         A0  AD  9F 0015E         PUSHAB  IMAGE_DESC
                         08  A6  9F 00161         PUSHAB  8(SCT)
   00000000G  00             0D  FB 00164         CALLS   #13, SYS$CREPRC
              53             50  D0 0016B         MOVL    R0, STATUS_3
              36             53  E8 0016E         BLBS    STATUS_3, 13$                    ; 2462
        0094  8F             53  B1 00171         CMPW    STATUS_3, #148                   ; 2470
```

```
                                    04  12 00176       BNEQ    11$                                       ;
                                    52  D5 00178       TSTL    PRCNAM                                    ;
                                    27  12 0017A       BNEQ    12$                                       ;
                  7E          06    A6  3C 0017C 11$:  MOVZWL  6(SCT), -(SP)                             ; 2473
       00000000G  00                01  FB 00180       CALLS   #1, SYS$DASSGN                            ;
                  6A                66  D0 00187       MOVL    (SCT), SYMBIONT_CONTROL                   ; 2474
                                    56  DD 0018A       PUSHL   SCT                                       ; 2475
       00000000G  EF                01  FB 0018C       CALLS   #1, DEALLOCATE_MEMORY                     ;
                              04    AC  DD 00193       PUSHL   SMQ_N                                     ; 2476
                                    04  DD 00196       PUSHL   #4                                        ;
       00000000G  EF                02  FB 00198       CALLS   #2, SCAN_INCOMPLETE_SERVICES              ;
                  50                53  D0 0019F       MOVL    STATUS_3, R0                              ; 2477
                                        04 001A2       RET                                               ;
                                    52  D4 001A3 12$:  CLRL    PRCNAM                                    ; 2479
                                    8E  11 001A5       BRB     10$                                       ; 2462
                              08    A6  DD 001A7 13$:  PUSHL   8(SCT)                                    ; 2483
                                    02  DD 001AA       PUSHL   #2                                        ;
       00000000G  EF                02  FB 001AC       CALLS   #2, ENTER_PROCESS_DATA                    ;
                              A8    AA  D6 001B3       INCL    QUEUE_REFERENCE_COUNT                     ; 2484
            00FC  C7                56  D0 001B6 14$:  MOVL    SCT, 252(R7)                              ; 2493
            0117  C7                58  90 001BB       MOVB    STM, 279(R7)                              ; 2494
              11  A7                01  88 001C0       BISB2   #1, 17(R7)                                ; 2495
              11  A7                02  8A 001C4       BICB2   #2, 17(R7)                                ; 2496
   00         0C  A6                58  E2 001C8       BBSS    STM, 12(SCT), 15$                         ; 2501
              3C A648         04    AC  D0 001CD 15$:  MOVL    SMQ_N, 60(SCT)[STM]                       ; 2502
              08  AE                04  B0 001D3       MOVW    #4, SMBMSG                                ; 2507
              0A  AE                01  90 001D7       MOVB    #1, SMBMSG+2                              ; 2508
              0B  AE        0117    C7  90 001DB       MOVB    279(R7), SMBMSG+3                         ; 2509
                  53          0C    AE  9E 001E1       MOVAB   SMBMSG+4, SMBITM                          ; 2510
                  50          50    A7  9A 001E5       MOVZBL  80(R7), R0                                ; 2515
                                    15  12 001E9       BNEQ    16$                                       ;
                  83        00B0    C7  9B 001EB       MOVZBW  176(R7), (SMBITM)+                        ; 2518
                  83                09  B0 001F0       MOVW    #9, (SMBITM)+                             ; 2519
                  51        00B0    C7  9A 001F3       MOVZBL  176(R7), R1                               ; 2522
   63       00B1  C7                51  28 001F8       MOVC3   R1, 177(R7), (SMBITM)                     ; 2524
                                    0B  11 001FE       BRB     17$                                       ; 2515
                  83                50  B0 00200 16$:  MOVW    R0, (SMBITM)+                             ; 2528
                  83                09  B0 00203       MOVW    #9, (SMBITM)+                             ; 2529
   63         51  A7                50  28 00206       MOVC3   R0, 81(R7), (SMBITM)                      ; 2534
                  83        00B0    C7  9B 0020B 17$:  MOVZBW  176(R7), (SMBITM)+                        ; 2540
                  83                0C  B0 00210       MOVW    #12, (SMBITM)+                            ; 2541
                  50        00B0    C7  9A 00213       MOVZBL  176(R7), R0                               ; 2544
   63       00B1  C7                50  28 00218       MOVC3   R0, 177(R7), (SMBITM)                     ; 2546
                                    53  DD 0021E       PUSHL   SMBITM                                    ; 2554
                                    1A  DD 00220       PUSHL   #26                                       ; 2552
                            0118    C7  9F 00222       PUSHAB  280(R7)                                   ;
                                    06  DD 00226       PUSHL   #6                                        ;
       00000000G  EF                04  FB 00228       CALLS   #4, FETCH_VARIABLE_ITEM                   ;
                  53                50  D0 0022F       MOVL    R0, SMBITM                                ;
                  56        0088    C7  9A 00232       MOVZBL  136(R7), R6                               ; 2559
   63             56                10  A1 00237       ADDW3   #16, R6, (SMBITM)                         ;
                                    58  D4 0023B       CLRL    R8                                        ; 2560
                                    56  D5 0023D       TSTL    R6                                        ;
                                    05  12 0023F       BNEQ    18$                                       ;
                                    58  D6 00241       INCL    R8                                        ;
                  63                19  B0 00243       MOVW    #25, (SMBITM)                             ;
              02  A3                1D  B0 00246 18$:  MOVW    #29, 2(SMBITM)                            ; 2561
```

```
                           53          04  C0 0024A        ADDL2   #4, SMBITM                                   ; 2562
          63        2B     AB          0C  28 0024D        MOVC3   #12, P.AAF, (SMBITM)                          ; 2566
                           07          58  E9 00252        BLBC    R8, 19$                                      ; 2572
          63        37     AB          09  28 00255        MOVC3   #9, P.AAG, (SMBITM)                           ;
                           06          11     0025A        BRB     20$                                          ; 2569
          63      0089     C7          56  28 0025C 19$:   MOVC3   R6, 137(R7), (SMBITM)                         ; 2577
                           83 424C542E 8F  D0 00262 20$:   MOVL    #1112298542, (SMBITM)+                        ; 2578
                                       83  D4 00269        CLRL    (SMBITM)+                                    ; 2584
                    04     AE       08 AE  9E 0026B        MOVAB   SMBMSG, SMBMSG_DESC+4                         ; 2591
          6E               53       04 AE  C3 00270        SUBL3   SMBMSG_DESC+4, SMBITM, SMBMSG_DESC            ; 2592
                                  4080 8F  BB 00275        PUSHR   #^M<R7,SP>                                   ; 2593
                  F798     CF          02  FB 00279        CALLS   #2, SEND_SYMBIONT_MESSAGE                     ;
                           50          01  D0 0027E        MOVL    #1, R0                                       ; 2597
                                       04     00281        RET                                                  ;

; Routine Size:  642 bytes,    Routine Base:  CODE + 06C0
```

```
1 GLOBAL ROUTINE STOP_SYMBIONT_STREAM(SMQ_N,SMQ): NOVALUE=
1
1 !++
1 !
1 ! FUNCTIONAL DESCRIPTION:
1 !       This routine sends the "stop stream" message to a symbiont.
1 !
1 ! INPUT PARAMETERS:
1 !       SMQ_N           - Record number of SMQ.
1 !       SMQ             - Pointer to SMQ.
1 !
1 ! IMPLICIT INPUTS:
1 !       NONE
1 !
1 ! OUTPUT PARAMETERS:
1 !       NONE
1 !
1 ! IMPLICIT OUTPUTS:
1 !       NONE
1 !
1 ! ROUTINE VALUE:
1 !       NONE
1 !
1 ! SIDE EFFECTS:
1 !       NONE
1 !
1 !--
1
2 BEGIN
2 MAP
2       SMQ:            REF BBLOCK;     ! Pointer to SMQ
2 LOCAL
2       SCT:            REF BBLOCK,     ! Pointer to SCT
2       SMBMSG:         BBLOCK[JBC$K_SMBMBXSIZ],! Message buffer
2       SMBITM:         REF BBLOCK,             ! Cursor for message items
2       SMBMSG_DESC:    VECTOR[2];              ! Descriptor for message buffer
2
2
2 ! Message header.
2 !
2 SMBMSG[SMBMSG$W_REQUEST_CODE] = SMBMSG$K_STOP_STREAM;
2 SMBMSG[SMBMSG$B_STRUCTURE_LEVEL] = SMBMSG$K_STRUCTURE_LEVEL;
2 SMBMSG[SMBMSG$B_STREAM_INDEX] = .SMQ[SMQ$B_STREAM_INDEX];
2 SMBITM = SMBMSG + SMBMSG$S_ITEM_HEADER;
2
2
2 ! Trailing zero item.
2 !
2 SMBITM[SMBMSG$W_ITEM_SIZE] = 0;
2 SMBITM[SMBMSG$W_ITEM_CODE] = 0;
2 SMBITM = .SMBITM + SMBMSG$S_ITEM_HEADER;
2
2
2 ! Send the message to the symbiont.
2 !
2 SMBMSG_DESC[1] = SMBMSG;
2 SMBMSG_DESC[0] = .SMBITM - .SMBMSG_DESC[1];
```

```
; 1625          2655  2 SEND_SYMBIONT_MESSAGE(.SMQ, SMBMSG_DESC);
; 1626          2656  2
; 1627          2657  2
; 1628          2658  2 ! Update SMQ.
; 1629          2659  2 !
; 1630          2660  2 SMQ[SMQ$V_STOPPING] = TRUE;
; 1631          2661  2 SMQ[SMQ$V_STOPPED] = TRUE;
; 1632          2662  1 END;




                                              0004 00000          .ENTRY   STOP_SYMBIONT_STREAM, Save R2                        ; 2598
                          5E      FC00     CE   9E 00002          MOVAB    -1024(SP), SP                                        ;
                          6E               06   B0 00007          MOVW     #6, SMBMSG                                           ; 2638
                   02     AE               01   90 0000A          MOVB     #1, SMBMSG+2                                         ; 2639
                          52        08     AC   D0 0000E          MOVL     SMQ, R2                                              ; 2640
                   03     AE      0117     C2   90 00012          MOVB     279(R2), SMBMSG+3                                    ;
                          50        04     AE   9E 00018          MOVAB    SMBMSG+4, SMBITM                                     ; 2641
                                           80   D4 0001C          CLRL     (SMBITM)+                                            ; 2646
                                           5E   DD 0001E          PUSHL    SP                                                   ; 2653
            7E            50               6E   C3 00020          SUBL3    SMBMSG_DESC+4, SMBITM, SMBMSG_DESC                   ; 2654
                                  4004     8F   BB 00024          PUSHR    #^M<R2,SP>                                           ; 2655
                 F767     CF               02   FB 00028          CALLS    #2, SEND_SYMBIONT_MESSAGE                            ;
                   11     A2               06   88 0002D          BISB2    #6, 17(R2)                                           ; 2661
                                                04 00031          RET                                                           ; 2662

; Routine Size:  50 bytes,    Routine Base:  CODE + 0942
```

```
1 GLOBAL ROUTINE RESET_SYMBIONT_STREAM(SMQ_N,SMQ): NOVALUE=
1
1 !++
1 !
1 ! FUNCTIONAL DESCRIPTION:
1 !       This routine sends the "reset stream" message to a symbiont.
1 !
1 ! INPUT PARAMETERS:
1 !       SMQ_N           - Record number of SMQ.
1 !       SMQ             - Pointer to SMQ.
1 !
1 ! IMPLICIT INPUTS:
1 !       NONE
1 !
1 ! OUTPUT PARAMETERS:
1 !       NONE
1 !
1 ! IMPLICIT OUTPUTS:
1 !       NONE
1 !
1 ! ROUTINE VALUE:
1 !       NONE
1 !
1 ! SIDE EFFECTS:
1 !       NONE
1 !
1 !--
1
2 BEGIN
2 MAP
2       SMQ:            REF BBLOCK;     ! Pointer to SMQ
2 LOCAL
2       SCT:            REF BBLOCK,     ! Pointer to SCT
2       SMBMSG:         BBLOCK[JBC$K_SMBMBXSIZ],! Message buffer
2       SMBITM:         REF BBLOCK,             ! Cursor for message items
2       SMBMSG_DESC:    VECTOR[2];              ! Descriptor for message buffer
2
2
2 ! Message header.
2 !
2 SMBMSG[SMBMSG$W_REQUEST_CODE] = SMBMSG$K_RESET_STREAM;
2 SMBMSG[SMBMSG$B_STRUCTURE_LEVEL] = SMBMSG$K_STRUCTURE_LEVEL;
2 SMBMSG[SMBMSG$B_STREAM_INDEX] = .SMQ[SMQ$B_STREAM_INDEX];
2 SMBITM = SMBMSG + SMBMSG$S_REQUEST_HEADER;
2
2
2 ! Trailing zero item.
2 !
2 SMBITM[SMBMSG$W_ITEM_SIZE] = 0;
2 SMBITM[SMBMSG$W_ITEM_CODE] = 0;
2 SMBITM = .SMBITM + SMBMSG$S_ITEM_HEADER;
2
2
2 ! Send the message to the symbiont.
2 !
2 SMBMSG_DESC[1] = SMBMSG;
2 SMBMSG_DESC[0] = .SMBITM - .SMBMSG_DESC[1];
```

```
; 1691          2720  2 SEND_SYMBIONT_MESSAGE(.SMQ, SMBMSG_DESC);
; 1692          2721  2
; 1693          2722  2
; 1694          2723  2 ! Update SCT.
; 1695          2724  2 !
; 1696          2725  2 SCT = .SMQ[SMQ$L_STREAM_SCT];
; 1697          2726  2 BITVECTOR[SCT[SCT_L_RESETTING], .SMQ[SMQ$B_STREAM_INDEX]] = TRUE;
; 1698          2727  2 VECTOR[SCT[SCT_L_QUEUES], .SMQ[SMQ$B_STREAM_INDEX]] = 0;
; 1699          2728  1 END;



                                            0004 00000          .ENTRY  RESET_SYMBIONT_STREAM, Save R2                        ; 2663
                         5E      FC00    CE   9E 00002          MOVAB   -1024(SP), SP                                         ;
                         6E              02   B0 00007          MOVW    #2, SMBMSG                                            ; 2703
                   02    AE              01   90 0000A          MOVB    #1, SMBMSG+2                                          ; 2704
                         52        08    AC   D0 0000E          MOVL    SMQ, R2                                               ; 2705
                   03    AE      0117    C2   90 00012          MOVB    279(R2), SMBMSG+3                                     ;
                         50        04    AE   9E 00018          MOVAB   SMBMSG+4, SMBITM                                      ; 2706
                                         80   D4 0001C          CLRL    (SMBITM)+                                             ; 2711
                                         5E   DD 0001E          PUSHL   SP                                                    ; 2718
        7E               50              6E   C3 00020          SUBL3   SMBMSG_DESC+4, SMBITM, SMBMSG_DESC                    ; 2719
                                 4004    8F   BB 00024          PUSHR   #^M<R2,SP>                                            ; 2720
                 F735    CF              02   FB 00028          CALLS   #2, SEND_SYMBIONT_MESSAGE                             ;
                         51      00FC    C2   D0 0002D          MOVL    252(R2), SCT                                          ; 2725
                         50      0117    C2   9A 00032          MOVZBL  279(R2), R0                                           ; 2726
        00         10    A1              50   E2 00037          BBSS    R0, 16(SCT), 1$                                       ;
                              3C A140    D4 0003C 1$:           CLRL    60(SCT)[R0]                                           ; 2727
                                         04 00040               RET                                                           ; 2728

; Routine Size:  65 bytes,    Routine Base:  CODE + 0974
```

```
ROUTINE PROCESS_SYMBIONT_MESSAGE(SMQ_N,SMQ,SCT): NOVALUE=

!++
!
! FUNCTIONAL DESCRIPTION:
!       This routine processes a symbiont response message.
!
! INPUT PARAMETERS:
!       SMQ_N           - Record number of SMQ.
!       SMQ             - Pointer to SMQ.
!       SCT             - Pointer to SCT.
!
! IMPLICIT INPUTS:
!       MBX             - Pointer to buffered mailbox message.
!
! OUTPUT PARAMETERS:
!       NONE
!
! IMPLICIT OUTPUTS:
!       NONE
!
! ROUTINE VALUE:
!       NONE
!
! SIDE EFFECTS:
!       NONE
!
!--

BEGIN
MAP
        SMQ:                    REF BBLOCK,     ! Pointer to SMQ
        SCT:                    REF BBLOCK;     ! Pointer to SCT
LOCAL
        SMBITM:                 REF BBLOCK,     ! Cursor for symbiont message
        REQUEST_RESPONSE,                       ! Symbiont request response
        CONDITION_VECTOR:       VECTOR[3],      ! Status of current request
        SRQ_TYPE,                               ! SRQ type to be completed
        SJH_N,                                  ! Record number of SJH
        SJH:                    REF BBLOCK;     ! Pointer to SJH


SMBITM = .MBX + SMBMSG$S_REQUEST_HEADER;
REQUEST_RESPONSE = SMBMSG$K_TASK_STATUS;
CONDITION_VECTOR[0] = JBC$_NORMAL;
CONDITION_VECTOR[1] = 0;
CONDITION_VECTOR[2] = 0;


! Read the current job record, if any.
!
SJH_N = .SMQ[SMQ$L_CURRENT_LIST];
IF .SJH_N NEQ 0 THEN SJH = READ_RECORD(.SJH_N);


! Process the message's item list.
!
```

```
2 WHILE .SMBITM LSSA .MBX_END DO
3     BEGIN
3     LOCAL
3         ITEM_CODE,                          ! Code of current item
3         ITEM_SIZE;                          ! Size of current item
3
3
3     ! Get the size and item code of the current item.
3     !
3     ITEM_SIZE = .SMBITM[SMBMSG$W_ITEM_SIZE];
3     ITEM_CODE = .SMBITM[SMBMSG$W_ITEM_CODE];
3     SMBITM = .SMBITM + SMBMSG$S_ITEM_HEADER;
3
3
3     ! Process the item.
3     !
3     CASE .ITEM_CODE FROM 0 TO SMBMSG$K_USER_NAME OF
3         SET
3
3
3         [INRANGE, OUTRANGE]:
3             CONDITION_VECTOR[0] = JBC$_INVMSG OR STS$K_ERROR;
3
3
3         [0]:
3             EXITLOOP;
3
3
3         [SMBMSG$K_ACCOUNTING_DATA]:
4             BEGIN
4             IF .ITEM_SIZE EQL SMBMSG$S_ACCOUNTING_DATA
4             THEN
5                 BEGIN
5                 SMQ[SMQ$L_ACM_GETCNT] =
5                     .SMQ[SMQ$L_ACM_GETCNT] + .SMBITM[SMBMSG$L_RMS_GETS];
5                 SMQ[SMQ$L_ACM_QIOCNT] =
5                     .SMQ[SMQ$L_ACM_QIOCNT] + .SMBITM[SMBMSG$L_QIO_PUTS];
5                 SMQ[SMQ$L_ACM_PAGECNT] =
5                     .SMQ[SMQ$L_ACM_PAGECNT] + .SMBITM[SMBMSG$L_PAGES_PRINTED];
5                 SMQ[SMQ$L_ACM_SYMCPUTIM] =
5                     .SMQ[SMQ$L_ACM_SYMCPUTIM] + .SMBITM[SMBMSG$L_CPU_TIME];
4                 END;
3             END;
3
3
3         [SMBMSG$K_CHECKPOINT_DATA]:
4             BEGIN
4             LOCAL
4                 SAVED_CHECKPOINT:       BBLOCK[SJH$S_CHECKPOINT];
4
4             IF .SJH_N NEQ 0
4             THEN
5                 BEGIN
5                 CH$MOVE(
5                     SJH$S_CHECKPOINT,
5                     SJH[SJH$T_CHECKPOINT],
5                     SAVED_CHECKPOINT);
```

```
; 1815      2843  5                     CH$FILL(0, SJH$S_CHECKPOINT, SJH[SJH$T_CHECKPOINT]);
; 1816      2844  5
; 1817      2845  5                     IF STORE_VARIABLE_DATA(
; 1818      2846  5                         .SJH,
; 1819      2847  5                         SJH$S_CHECKPOINT,
; 1820      2848  5                         SJH[SJH$T_CHECKPOINT],
; 1821      2849  5                         SYM$K_CHECKPOINT,
; 1822      2850  5                         .ITEM_SIZE,
; 1823      2851  5                         .SMBITM)
; 1824      2852  5                     THEN
; 1825      2853  5                         DEALLOCATE_VARIABLE_DATA(
; 1826      2854  5                             SJH$S_CHECKPOINT,
; 1827      2855  5                             SAVED_CHECKPOINT)
; 1828      2856  5                     ELSE
; 1829      2857  5                         CH$MOVE(
; 1830      2858  5                             SJH$S_CHECKPOINT,
; 1831      2859  5                             SAVED_CHECKPOINT,
; 1832      2860  5                             SJH[SJH$T_CHECKPOINT]);
; 1833      2861  4                     END;
; 1834      2862  3                 END;
; 1835      2863  3
; 1836      2864  3
; 1837      2865  3             [SMBMSG$K_CONDITION_VECTOR]:
; 1838      2866  4                 BEGIN
; 1839      2867  4                 CH$COPY(
; 1840      2868  4                     .ITEM_SIZE, .SMBITM,
; 1841      2869  4                     0,
; 1842      2870  4                     %ALLOCATION(CONDITION_VECTOR), CONDITION_VECTOR);
; 1843      2871  3                 END;
; 1844      2872  3
; 1845      2873  3
; 1846      2874  3             [SMBMSG$K_DEVICE_STATUS]:
; 1847      2875  4                 BEGIN
; 1848      2876  4                 IF .ITEM_SIZE EQL SMBMSG$S_DEVICE_STATUS
; 1849      2877  4                 THEN
; 1850      2878  5                     BEGIN
; 1851      2879  5                     SMQ[SMQ$V_LOWERCASE] = FALSE;
; 1852      2880  5                     SMQ[SMQ$V_REMOTE] = FALSE;
; 1853      2881  5                     SMQ[SMQ$V_SERVER] = FALSE;
; 1854      2882  5                     SMQ[SMQ$V_STALLED] = FALSE;
; 1855      2883  5                     SMQ[SMQ$V_TERMINAL] = FALSE;
; 1856      2884  5                     SMQ[SMQ$V_UNAVAILABLE] = FALSE;
; 1857      2885  5                     IF .SMBITM[SMBMSG$V_LOWERCASE]
; 1858      2886  5                         THEN SMQ[SMQ$V_LOWERCASE] = TRUE;
; 1859      2887  5                     IF .SMBITM[SMBMSG$V_PAUSE_TASK]
; 1860      2888  5                         THEN SMQ[SMQ$V_PAUSED] = TRUE;
; 1861      2889  5                     IF .SMBITM[SMBMSG$V_REMOTE]
; 1862      2890  5                         THEN SMQ[SMQ$V_REMOTE] = TRUE;
; 1863      2891  5                     IF .SMBITM[SMBMSG$V_SERVER]
; 1864      2892  5                         THEN SMQ[SMQ$V_SERVER] = TRUE;
; 1865      2893  5                     IF .SMBITM[SMBMSG$V_STALLED]
; 1866      2894  5                         THEN SMQ[SMQ$V_STALLED] = TRUE;
; 1867      2895  5                     IF .SMBITM[SMBMSG$V_STOP_STREAM]
; 1868      2896  5                         THEN SMQ[SMQ$V_STOPPED] = TRUE;
; 1869      2897  5                     IF .SMBITM[SMBMSG$V_TERMINAL]
; 1870      2898  5                         THEN SMQ[SMQ$V_TERMINAL] = TRUE;
; 1871      2899  5                     IF .SMBITM[SMBMSG$V_UNAVAILABLE]
```

```
5                   THEN SMQ[SMQ$V_UNAVAILABLE] = TRUE;
4               END;
3           END;
3
3
3       [SMBMSG$K_MAXIMUM_STREAMS]:
4           BEGIN
4           IF .ITEM_SIZE EQL 4
4           THEN
4               SCT[SCT_B_MAXSTREAMS] = ..SMBITM;
3           END;
3
3
3       [SMBMSG$K_REFUSE_REASON]:
4           BEGIN
4           LOCAL
4               SAVED_REFUSAL_REASON:   BBLOCK[SJH$S_REFUSAL_REASON];
4
4           IF .SJH_N NEQ 0
4           THEN
5               BEGIN
5               CH$MOVE(
5                   SJH$S_REFUSAL_REASON,
5                   SJH[SJH$T_REFUSAL_REASON],
5                   SAVED_REFUSAL_REASON);
5               CH$FILL(0, SJH$S_REFUSAL_REASON, SJH[SJH$T_REFUSAL_REASON]);
5
5               IF STORE_VARIABLE_DATA(
5                   .SJH,
5                   SJH$S_REFUSAL_REASON,
5                   SJH[SJH$T_REFUSAL_REASON],
5                   SYM$K_REFUSAL_REASON,
5                   .ITEM_SIZE,
5                   .SMBITM)
5               THEN
5                   DEALLOCATE_VARIABLE_DATA(
5                       SJH$S_REFUSAL_REASON,
5                       SAVED_REFUSAL_REASON)
5               ELSE
5                   CH$MOVE(
5                       SJH$S_REFUSAL_REASON,
5                       SAVED_REFUSAL_REASON,
5                       SJH[SJH$T_REFUSAL_REASON]);
5
5               SJH[SJH$V_REFUSED] = TRUE;
4               END;
3           END;
3
3
3       [SMBMSG$K_REQUEST_RESPONSE]:
4           BEGIN
4           IF .ITEM_SIZE EQL 4
4           THEN
4               IF ..SMBITM GEQU SMBMSG$K_PAUSE_TASK
4               AND ..SMBITM LEQU SMBMSG$K_TASK_STATUS
4               THEN
4                   REQUEST_RESPONSE = ..SMBITM;
```

```
3                 END;
3
3
3             TES;
3
3
3         SMBITM = .SMBITM + .ITEM_SIZE;
2         END;
2
2
2     ! Update state based on the request status.
2     !
2     SRQ_TYPE = 0;
2     CASE .REQUEST_RESPONSE FROM SMBMSG$K_PAUSE_TASK TO SMBMSG$K_TASK_STATUS OF
2         SET
2
2
2         [SMBMSG$K_PAUSE_TASK]:
3             BEGIN
3             IF .CONDITION_VECTOR[0]
3             THEN
3                 SMQ[SMQ$V_PAUSED] = TRUE;
3             SMQ[SMQ$V_PAUSING] = FALSE;
2             END;
2
2
2         [SMBMSG$K_RESET_STREAM]:
2             0;
2
2
2         [SMBMSG$K_RESUME_TASK]:
3             BEGIN
3             IF .CONDITION_VECTOR[0]
3             THEN
4                 BEGIN
4                 SMQ[SMQ$V_OPERATOR_REQUEST] = FALSE;
4                 SMQ[SMQ$V_PAUSED] = FALSE;
4                 IF .SMQ[SMQ$V_ALIGNING] THEN SMQ[SMQ$V_PAUSED] = TRUE;
3                 END;
3             SMQ[SMQ$V_ALIGNING] = FALSE;
3             SMQ[SMQ$V_RESUMING] = FALSE;
2             END;
2
2
2         [SMBMSG$K_START_STREAM]:
3             BEGIN
3             SRQ_TYPE = SRQ$K_START_SYMBIONT;
3             SMQ[SMQ$V_STARTING] = FALSE;
3             IF NOT .CONDITION_VECTOR[0]
3             THEN
4                 BEGIN
4                 IF .SMQ[SMQ$B_STREAM_INDEX] GTRU .SCT[SCT_B_MAXSTREAMS]
4                 THEN
5                     BEGIN
5                     BITVECTOR[SCT[SCT_L_BITMAP], .SMQ[SMQ$B_STREAM_INDEX]] = FALSE;
5                     VECTOR[SCT[SCT_L_QUEUES], .SMQ[SMQ$B_STREAM_INDEX]] = 0;
5                     CONDITION_VECTOR[0] = START_SYMBIONT_STREAM(.SMQ_N, .SMQ);
```

```
5               IF .CONDITION_VECTOR[0] THEN RETURN;
5               END
4           ELSE
4               SMQ[SMQ$V_STOPPED] = TRUE;
3           END;
2       END;
2
2
2   [SMBMSG$K_START_TASK]:
3       BEGIN
3       IF .SJH_N NEQ 0
3       THEN
3           SJH[SJH$V_FILE_STARTING] = FALSE;
3
3       IF NOT .CONDITION_VECTOR[0]
3       OR .SJH[SJH$V_REFUSED]
3       THEN
3           REQUEST_RESPONSE = SMBMSG$K_TASK_COMPLETE
3       ELSE
4           BEGIN
4           IF .SMQ[SMQ$V_OPERATOR_REQUEST]
4           THEN
5               BEGIN
5               SMQ[SMQ$V_PAUSED] = FALSE;        ! Temporarily cleared (V03-015)
5               SMQ[SMQ$V_OPERATOR_REQUEST] = FALSE;      ! Temp. added (V03-015)
5               IF .SJH_N NEQ 0 THEN OPERATOR_REQUEST(.SMQ, .SJH);
4               END;
3           END;
2       END;
2
2
2   [SMBMSG$K_STOP_STREAM]:
3       BEGIN
3       BITVECTOR[SCT[SCT_L_BITMAP], .SMQ[SMQ$B_STREAM_INDEX]] = FALSE;
3       VECTOR[SCT[SCT_L_QUEUES], .SMQ[SMQ$B_STREAM_INDEX]] = 0;
3       IF .SCT[SCT_L_BITMAP] EQL 0 THEN SCT[SCT_V_DELETING] = TRUE;
3       SMQ[SMQ$L_STREAM_SCT] = 0;
3       SMQ[SMQ$B_STREAM_INDEX] = 0;
3       SMQ[SMQ$V_PAUSED] = FALSE;
3       SMQ[SMQ$V_STALLED] = FALSE;
3       SMQ[SMQ$V_STOPPING] = FALSE;
2       END;
2
2
2   [SMBMSG$K_STOP_TASK, SMBMSG$K_TASK_COMPLETE]:
3       BEGIN
3       IF .SMQ[SMQ$V_PAUSING] THEN SMQ[SMQ$V_PAUSED] = TRUE;
3       SMQ[SMQ$V_ALIGNING] = FALSE;
3       SMQ[SMQ$V_OPERATOR_REQUEST] = FALSE;
3       SMQ[SMQ$V_PAUSING] = FALSE;
3       SMQ[SMQ$V_RESUMING] = FALSE;
2       END;
2
2
2   [SMBMSG$K_TASK_STATUS]:
2       0;
2
```

```
   2
   2        TES;
   2
   2
   2    ! If an incomplete service has completed, notify the requestor.
   2    !
   2    IF .SRQ_TYPE NEQ 0
   2    THEN
   2        SCAN_INCOMPLETE_SERVICES(
   2            ISRV_K_SYMBIONT,
   2            .SMQ_N, .SMQ,
   2            .SRQ_TYPE,
   2            .CONDITION_VECTOR[0]);
   2
   2
   2    ! If the stream is not available for new work, we are done.
   2    !
P  2    IF NOT ONEOF_(.REQUEST_RESPONSE,
P  2        BMSK_(
P  2            SMBMSG$K_START_STREAM,
P  2            SMBMSG$K_STOP_TASK,
   3            SMBMSG$K_TASK_COMPLETE))
   2    THEN
   3        BEGIN
   3        IF .SJH_N NEQ 0 THEN REWRITE_RECORD(.SJH_N);
   3        RETURN;
   2        END;
   2
   2
   2    ! Handle multi-copy and multi-file situations.
   2    !
   2    IF .SJH_N NEQ 0
   2    THEN
   3        BEGIN
   3
   3        ! Update the job status with the received status.
   3        !
   3        IF .SJH[SJH$L_CONDITION_1] EQL 0
   4        OR (.SJH[SJH$L_CONDITION_1] AND NOT .CONDITION_VECTOR[0])
   3        THEN
   3            CH$MOVE(
   3                SJH$S_CONDITION_VECTOR,
   3                CONDITION_VECTOR,
   3                SJH[SJH$L_CONDITION_1]);
   3
   3
   3        IF .SJH[SJH$V_REFUSED]
   3        THEN
   4            BEGIN
   4            UPDATE_GETQUI_DATA(.SJH_N, .SJH);
   4            ENQUEUE_JOB(.SJH_N, .SJH);
   4            SMQ[SMQ$L_CURRENT_LIST] = 0;
   4            SMQ[SMQ$L_CURRENT_LIST_END] = 0;
   4            SMQ[SMQ$B_CURRENT_JOB_COUNT] = 0;
   4            END
   4
   4
```

```
3       ELSE IF .SJH[SJH$V_ABORTED]
3       THEN
4           BEGIN
4           UPDATE_GETQUI_DATA(.SJH_N, .SJH);
4           COMPLETE_JOB(.SJH_N, .SJH, .SMQ, 0);
4           SJH_N = 0;
4           SMQ[SMQ$L_CURRENT_LIST] = 0;
4           SMQ[SMQ$L_CURRENT_LIST_END] = 0;
4           SMQ[SMQ$B_CURRENT_JOB_COUNT] = 0;
4           END
4
4
3       ELSE
4           BEGIN
4           LOCAL
4               SQR_N,                          ! Record number of SQR
4               SQR:        REF BBLOCK;         ! Pointer to SQR
4
4
4           SQR = READ_RECORD(SQR_N = .SJH[SJH$L_CURRENT_FILE_LINK]);
4
4
4           SJH[SJH$L_COMPLETED_BLOCKS] =
4               .SJH[SJH$L_COMPLETED_BLOCKS] + .SQR[SQR$L_FILE_SIZE];
4           SJH[SJH$L_CURRENT_FILE_CHKPT] = 0;
4           SJH[SJH$B_JOB_COPIES_CHKPT] = 0;
4           SJH[SJH$B_FILE_COPIES_CHKPT] = 0;
4           DEALLOCATE_VARIABLE_DATA(
4               SJH$S_CHECKPOINT,
4               SJH[SJH$T_CHECKPOINT]);
4
4
4           SJH[SJH$B_FILE_COPIES_DONE] = .SJH[SJH$B_FILE_COPIES_DONE] + 1;
4           IF .SJH[SJH$B_FILE_COPIES_DONE] GEQU .SQR[SQR$B_FILE_COPIES]
4           THEN
5               BEGIN
5               IF .SQR[SYM$L_LINK] EQL 0
5               THEN
6                   BEGIN
6                   SJH[SJH$B_JOB_COPIES_DONE] = .SJH[SJH$B_JOB_COPIES_DONE] + 1;
6                   IF .SJH[SJH$B_JOB_COPIES_DONE] GEQU .SJH[SJH$B_JOB_COPIES]
6                   THEN
7                       BEGIN
7                       RELEASE_RECORD(.SQR_N);
7                       UPDATE_GETQUI_DATA(.SJH_N, .SJH);
7                       COMPLETE_JOB(.SJH_N, .SJH, .SMQ, 0);
7                       SJH_N = 0;
7                       SMQ[SMQ$L_CURRENT_LIST] = 0;
7                       SMQ[SMQ$L_CURRENT_LIST_END] = 0;
7                       SMQ[SMQ$B_CURRENT_JOB_COUNT] = 0;
7                       END
6                   ELSE
7                       BEGIN
7                       LOCAL
7                           SQR_N2,                     ! Record number of SQR
7                           SQR_2:  REF BBLOCK;         ! Pointer to SQR
7
```

```
7                               SQR_2 = READ_RECORD(SQR_N2 = .SJH[SJH$L_FILE_LIST]);
7                               SJH[SJH$B_FILE_COPIES_DONE] = 0;
7                               START_SYMBIONT_TASK(
7                                   .SMQ_N, .SMQ,
7                                   .SJH_N, .SJH,
7                                   .SQR_N2, .SQR_2);
7                               END
6                           END
5                       ELSE
6                           BEGIN
6                           LOCAL
6                               SQR_N2,                                 ! Record number of SQR
6                               SQR_2:                  REF BBLOCK;     ! Pointer to SQR
6
6                           SQR_2 = READ_RECORD(SQR_N2 = .SQR[SYM$L_LINK]);
6                           SJH[SJH$B_FILE_COPIES_DONE] = 0;
6                           START_SYMBIONT_TASK(
6                               .SMQ_N, .SMQ,
6                               .SJH_N, .SJH,
6                               .SQR_N2, .SQR_2);
6                           END
5                       END
4                   ELSE
5                       BEGIN
5                       START_SYMBIONT_TASK(
5                           .SMQ_N, .SMQ,
5                           .SJH_N, .SJH,
5                           .SQR_N, .SQR);
5                       END
3                   END;
2               END;
2
2
2   ! Rewrite the job header, if any.
2   !
2   IF .SJH_N NEQ 0 THEN REWRITE_RECORD(.SJH_N);
2
2   !
2   ! Find the next work item for the symbiont.
2   !
2   IF .SMQ[SMQ$B_CURRENT_JOB_COUNT] EQL 0
2   THEN
2       IF .SMQ[SMQ$V_STOPPED]
2       THEN
2           STOP_SYMBIONT_STREAM(.SMQ_N, .SMQ)
2       ELSE
2           FIND_PENDING_JOBS(.SMQ_N, .SMQ);
1   END;
```

```
                                          0FFC 00000 PROCESS_SYMBIONT_MESSAGE:
                                                          .WORD   Save R2,R3,R4,R5,R6,R7,R8,R9,R10,R11        ; 2729
                  5E               2C  C2 00002           SUBL2   #44, SP                                       ;
     5A 00000000'  EF              04  C1 00005           ADDL3   #4, MBX, SMBITM                               ; 2771
```

```
                                         09  DD 0000D            PUSHL   #9                                    ; 2772
                    24    AE 00040001    8F  D0 0000F            MOVL    #262145, CONDITION_VECTOR             ; 2773
                                   28    AE  7C 00017            CLRQ    CONDITION_VECTOR+4                    ; 2774
                          57       08    AC  D0 0001A            MOVL    SMQ, R7                               ; 2780
                          59       48    A7  D0 0001E            MOVL    72(R7), SJH_N                         ;
                                         7E  D4 00022            CLRL    -(SP)                                 ; 2781
                                         59  D5 00024            TSTL    SJH_N                                 ;
                                         0E  13 00026            BEQL    1$                                    ;
                                         6E  D6 00028            INCL    (SP)                                  ;
                                         59  DD 0002A            PUSHL   SJH_N                                 ;
               00000000G  EF             01  FB 0002C            CALLS   #1, READ_RECORD                       ;
                          56             50  D0 00033            MOVL    R0, SJH                               ;
               00000000'  EF             5A  D1 00036 1$:        CMPL    SMBITM, MBX_END                       ; 2786
                                         03  1F 0003D            BLSSU   2$                                    ;
                                       01B6  31 0003F            BRW     27$                                   ;
                          58             8A  3C 00042 2$:        MOVZWL  (SMBITM)+, ITEM_SIZE                  ; 2795
                          50             8A  3C 00045            MOVZWL  (SMBITM)+, ITEM_CODE                  ; 2796
                   38     00             50  CF 00048            CASEL   ITEM_CODE, #0, #56                    ; 2802
     0072        0072   007C           01AC     0004C 3$:        .WORD   27$-3$,-                              ;
     0096        0072   0072           0072     00054                    5$-3$,-                               ;
     0072        00DD   0072           00D4     0005C                    4$-3$,-                               ;
     0072        0072   0072           0072     00064                    4$-3$,-                               ;
     0072        0072   0072           0072     0006C                    4$-3$,-                               ;
     0072        0072   0072           0072     00074                    4$-3$,-                               ;
     0072        0072   0072           0072     0007C                    4$-3$,-                               ;
     0072        0142   0072           0072     00084                    6$-3$,-                               ;
     0072        0072   0072           0072     0008C                    8$-3$,-                               ;
     0072        0072   0072           0072     00094                    4$-3$,-                               ;
     0072        0072   0072           0072     0009C                    10$-3$,-                              ;
     0072        0072   0151           0072     000A4                    4$-3$,-                               ;
     0072        0072   0072           0194     000AC                    4$-3$,-                               ;
     0072        0072   0072           0072     000B4                    4$-3$,-                               ;
                                       0072     000BC                    4$-3$,-                               ;
                                                                         4$-3$,-                               ;
                                                                         4$-3$,-                               ;
                                                                         4$-3$,-                               ;
                                                                         4$-3$,-                               ;
                                                                         4$-3$,-                               ;
                                                                         4$-3$,-                               ;
                                                                         4$-3$,-                               ;
                                                                         4$-3$,-                               ;
                                                                         4$-3$,-                               ;
                                                                         4$-3$,-                               ;
                                                                         4$-3$,-                               ;
                                                                         4$-3$,-                               ;
                                                                         4$-3$,-                               ;
                                                                         4$-3$,-                               ;
                                                                         4$-3$,-                               ;
                                                                         4$-3$,-                               ;
                                                                         20$-3$,-                              ;
                                                                         4$-3$,-                               ;
                                                                         4$-3$,-                               ;
                                                                         4$-3$,-                               ;
                                                                         4$-3$,-                               ;
                                                                         4$-3$,-                               ;
                                                                         4$-3$,-                               ;
                                                                         4$-3$,-                               ;
                                                                         4$-3$,-                               ;
```

```
                                                                           4$-3$,-                                    ;
                                                                           4$-3$,-                                    ;
                                                                           4$-3$,-                                    ;
                                                                           4$-3$,-                                    ;
                                                                           4$-3$,-                                    ;
                                                                           4$-3$,-                                    ;
                                                                           22$-3$,-                                   ;
                                                                           4$-3$,-                                    ;
                                                                           4$-3$,-                                    ;
                                                                           25$-3$,-                                   ;
                                                                           4$-3$,-                                    ;
                                                                           4$-3$,-                                    ;
                                                                           4$-3$,-                                    ;
                                                                           4$-3$,-                                    ;
                                                                           4$-3$,-                                    ;
                                                                           4$-3$,-                                    ;
                                                                           4$-3$,-                                    ;
                                                                           4$-3$                                      ;
                             28  AE 00048422  8F  D0 000BE 4$:     MOVL    #295970, CONDITION_VECTOR              ;   2807
                                              5F  11 000C6         BRB     9$                                     ;
                                 10           58  D1 000C8 5$:     CMPL    ITEM_SIZE, #16                         ;   2816
                                              5F  12 000CB         BNEQ    11$                                    ;
                             1C  A7       08  AA  C0 000CD         ADDL2   8(SMBITM), 28(R7)                      ;   2820
                             24  A7       04  AA  C0 000D2         ADDL2   4(SMBITM), 36(R7)                      ;   2822
                             20  A7           6A  C0 000D7         ADDL2   (SMBITM), 32(R7)                       ;   2824
                             28  A7       0C  AA  C0 000DB         ADDL2   12(SMBITM), 40(R7)                     ;   2826
                                              45  11 000E0         BRB     9$                                     ;   2802
                                 42           6E  E9 000E2 6$:     BLBC    (SP), 9$                               ;   2836
                                 5B     0180  C6  9E 000E5         MOVAB   384(SJH), R11                          ;   2841
          08    AE               6B           20  28 000EA         MOVC3   #32, (R11), SAVED_CHECKPOINT           ;
20              00               6E           00  2C 000EF         MOVC5   #0, (SP), #0, #32, (R11)               ;   2843
                                              6B     000F4                                                        ;
                                        0500  8F  BB 000F5         PUSHR   #^M<R8,R10>                            ;   2850
                                              0B  DD 000F9         PUSHL   #11                                    ;   2848
                                              5B  DD 000FB         PUSHL   R11                                    ;
                                              20  DD 000FD         PUSHL   #32                                    ;
                                              56  DD 000FF         PUSHL   SJH                                    ;
                      00000000G  EF           06  FB 00101         CALLS   #6, STORE_VARIABLE_DATA                ;
                                 0E           50  E9 00108         BLBC    R0, 7$                                 ;
                                          08  AE  9F 0010B         PUSHAB  SAVED_CHECKPOINT                       ;   2853
                                              20  DD 0010E         PUSHL   #32                                    ;
                      00000000G  EF           02  FB 00110         CALLS   #2, DEALLOCATE_VARIABLE_DATA           ;
                                              73  11 00117         BRB     19$                                    ;
                6B           08  AE           20  28 00119 7$:     MOVC3   #32, SAVED_CHECKPOINT, (R11)           ;   2860
                                              7B  11 0011E         BRB     21$                                    ;   2836
0C              00               6A           58  2C 00120 8$:     MOVC5   ITEM_SIZE, (SMBITM), #0, #12, -        ;   2867
                                          28  AE     00125                 CONDITION_VECTOR                       ;
                                              72  11 00127 9$:     BRB     21$                                    ;   2802
                                 04           58  D1 00129 10$:    CMPL    ITEM_SIZE, #4                          ;   2876
                                              6D  12 0012C 11$:    BNEQ    21$                                    ;
                                 51       0C  A7  9E 0012E         MOVAB   12(R7), R1                             ;   2879
                             02  A1           01  8A 00132         BICB2   #1, 2(R1)                              ;
                                 50       10  A7  9E 00136         MOVAB   16(R7), R0                             ;   2880
                                 60           10  8A 0013A         BICB2   #16, (R0)                              ;
                             02  A1           10  8A 0013D         BICB2   #16, 2(R1)                             ;   2881
                                 60       80  8F  8A 00141         BICB2   #128, (R0)                             ;   2882
                             02  A1       40  8F  8A 00145         BICB2   #64, 2(R1)                             ;   2883
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SYMBIONT        Symbiont communication                    F 15
                                                          16-Sep-1984 00:37:14    VAX-11 Bliss-32 V4.0-742              Page  66
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                                        01    A0            08  8A 0014A        BICB2   #8, 1(R0)                                   ; 2884
                                              04            6A  E9 0014E        BLBC    (SMBITM), 12$                               ; 2885
                                        02    A1            01  88 00151        BISB2   #1, 2(R1)                                   ; 2886
                              03              6A            01  E1 00155 12$:   BBC     #1, (SMBITM), 13$                           ; 2887
                                              60            04  88 00159        BISB2   #4, (R0)                                    ; 2888
                              03              6A            02  E1 0015C 13$:   BBC     #2, (SMBITM), 14$                           ; 2889
                                              60            10  88 00160        BISB2   #16, (R0)                                   ; 2890
                              04              6A            03  E1 00163 14$:   BBC     #3, (SMBITM), 15$                           ; 2891
                                        02    A1            10  88 00167        BISB2   #16, 2(R1)                                  ; 2892
                              04              6A            04  E1 0016B 15$:   BBC     #4, (SMBITM), 16$                           ; 2893
                                              60      80    8F  88 0016F        BISB2   #128, (R0)                                  ; 2894
                              04              6A            05  E1 00173 16$:   BBC     #5, (SMBITM), 17$                           ; 2895
                                        01    A0            02  88 00177        BISB2   #2, 1(R0)                                   ; 2896
                              05              6A            06  E1 0017B 17$:   BBC     #6, (SMBITM), 18$                           ; 2897
                                        02    A1      40    8F  88 0017F        BISB2   #64, 2(R1)                                  ; 2898
                                                            6A  95 00184 18$:   TSTB    (SMBITM)                                    ; 2899
                                                            6A  18 00186        BGEQ    26$                                         ;
                                        01    A0            08  88 00188        BISB2   #8, 1(R0)                                   ; 2900
                                                            64  11 0018C 19$:   BRB     26$                                         ; 2802
                                              04            58  D1 0018E 20$:   CMPL    ITEM_SIZE, #4                               ; 2907
                                                            5F  12 00191        BNEQ    26$                                         ;
                                              50      0C    AC  D0 00193        MOVL    SCT, R0                                     ; 2909
                                        05    A0            6A  90 00197        MOVB    (SMBITM), 5(R0)                             ;
                                                            55  11 0019B 21$:   BRB     26$                                         ; 2802
                                              52            6E  E9 0019D 22$:   BLBC    (SP), 26$                                   ; 2918
                                              5B    01D2    C6  9E 001A0        MOVAB   466(SJH), R11                               ; 2923
                        20    AE              6B            06  28 001A5        MOVC3   #6, (R11), SAVED_REFUSAL_REASON             ;
              06              00              6E            00  2C 001AA        MOVC5   #0, (SP), #0, #6, (R11)                     ; 2925
                                                            6B     001AF                                                            ;
                                                    0500    8F  BB 001B0        PUSHR   #^M<R8,R10>                                 ; 2932
                                                            15  DD 001B4        PUSHL   #21                                         ; 2930
                                                            5B  DD 001B6        PUSHL   R11                                         ;
                                                            06  DD 001B8        PUSHL   #6                                          ;
                                                            56  DD 001BA        PUSHL   SJH                                         ;
                                 00000000G    EF            06  FB 001BC        CALLS   #6, STORE_VARIABLE_DATA                     ;
                                              0E            50  E9 001C3        BLBC    R0, 23$                                     ;
                                                      20    AE  9F 001C6        PUSHAB  SAVED_REFUSAL_REASON                        ; 2935
                                                            06  DD 001C9        PUSHL   #6                                          ;
                                 00000000G    EF            02  FB 001CB        CALLS   #2, DEALLOCATE_VARIABLE_DATA                ;
                                                            05  11 001D2        BRB     24$                                         ;
                              6B        20    AE            06  28 001D4 23$:   MOVC3   #6, SAVED_REFUSAL_REASON, (R11)             ; 2942
                                        10    A6      80    8F  88 001D9 24$:   BISB2   #128, 16(SJH)                               ; 2944
                                                            12  11 001DE        BRB     26$                                         ; 2802
                                              04            58  D1 001E0 25$:   CMPL    ITEM_SIZE, #4                               ; 2951
                                                            0D  12 001E3        BNEQ    26$                                         ;
                                                            6A  D5 001E5        TSTL    (SMBITM)                                    ; 2953
                                                            09  13 001E7        BEQL    26$                                         ;
                                              09            6A  D1 001E9        CMPL    (SMBITM), #9                                ; 2954
                                                            04  1A 001EC        BGTRU   26$                                         ;
                                        04    AE            6A  D0 001EE        MOVL    (SMBITM), REQUEST_RESPONSE                  ; 2956
                                              5A            58  C0 001F2 26$:   ADDL2   ITEM_SIZE, SMBITM                           ; 2963
                                                          FE3E  31 001F5        BRW     1$                                          ; 2786
                                                            52  D4 001F8 27$:   CLRL    SRQ_TYPE                                    ; 2969
                              08        01            04    AE  CF 001FA        CASEL   REQUEST_RESPONSE, #1, #8                    ; 2970
            0037      0020                  00DA          0012     001FF 28$:   .WORD   29$-28$,-                                   ;
            00CB      00CB                  00A0          0073     00207                46$-28$,-                                   ;
                                                          00DA     0020F                31$-28$,-                                   ;
```

```
                                                                  33$-28$,-                          ;
                                                                  36$-28$,-                          ;
                                                                  41$-28$,-                          ;
                                                                  44$-28$,-                          ;
                                                                  44$-28$,-                          ;
                                                                  46$-28$                            ;
                04       28    AE   E9 00211 29$:      BLBC      CONDITION_VECTOR, 30$               ; 2976
          10    A7             04   88 00215           BISB2     #4, 16(R7)                          ; 2978
          10    A7             08   8A 00219 30$:      BICB2     #8, 16(R7)                          ; 2979
                               7E   11 0021D           BRB       40$                                 ; 2970
                0C       28    AE   E9 0021F 31$:      BLBC      CONDITION_VECTOR, 32$               ; 2989
          10    A7             06   8A 00223           BICB2     #6, 16(R7)                          ; 2993
                04       10    A7   E9 00227           BLBC      16(R7), 32$                         ; 2994
          10    A7             04   88 0022B           BISB2     #4, 16(R7)                          ;
          10    A7       41    8F   8A 0022F 32$:      BICB2     #65, 16(R7)                         ; 2997
                               67   11 00234           BRB       40$                                 ; 2970
                52             0C   D0 00236 33$:      MOVL      #12, SRQ_TYPE                       ; 3003
          11    A7             01   8A 00239           BICB2     #1, 17(R7)                          ; 3004
                5C       28    AE   E8 0023D           BLBS      CONDITION_VECTOR, 40$               ; 3005
                51     0117    C7   9A 00241           MOVZBL    279(R7), R1                         ; 3008
                50       0C    AC   D0 00246           MOVL      SCT, R0                             ;
                51       05    A0   91 0024A           CMPB      5(R0), R1                           ;
                               1C   1E 0024E           BGEQU     35$                                 ;
    00    0C    A0             51   E5 00250           BBCC      R1, 12(R0), 34$                     ; 3011
                         3C  A041   D4 00255 34$:      CLRL      60(R0)[R1]                          ; 3012
                               57   DD 00259           PUSHL     R7                                  ; 3013
                         04    AC   DD 0025B           PUSHL     SMQ_N                               ;
        FAA8    CF             02   FB 0025E           CALLS     #2, START_SYMBIONT_STREAM           ;
          28    AE             50   D0 00263           MOVL      R0, CONDITION_VECTOR                ;
          6E             28    AE   E9 00267           BLBC      CONDITION_VECTOR, 46$               ; 3014
                               04   0026B              RET                                           ;
          11    A7             02   88 0026C 35$:      BISB2     #2, 17(R7)                          ; 3017
                               67   11 00270           BRB       46$                                 ; 3005
                04             6E   E9 00272 36$:      BLBC      (SP), 37$                           ; 3024
          10    A6             10   8A 00275           BICB2     #16, 16(SJH)                        ; 3026
                05       28    AE   E9 00279 37$:      BLBC      CONDITION_VECTOR, 38$               ; 3028
                         10    A6   95 0027D           TSTB      16(SJH)                             ; 3029
                               06   18 00280           BGEQ      39$                                 ;
          04    AE             08   D0 00282 38$:      MOVL      #8, REQUEST_RESPONSE                ; 3031
                               51   11 00286           BRB       46$                                 ;
    4C    10    A7             01   E1 00288 39$:      BBC       #1, 16(R7), 46$                     ; 3034
          10    A7             06   8A 0028D           BICB2     #6, 16(R7)                          ; 3038
                45             6E   E9 00291           BLBC      (SP), 46$                           ; 3039
                               56   DD 00294           PUSHL     SJH                                 ;
                               57   DD 00296           PUSHL     R7                                  ;
        F419    CF             02   FB 00298           CALLS     #2, OPERATOR_REQUEST                ;
                               3A   11 0029D 40$:      BRB       46$                                 ; 2970
                50       0C    AC   D0 0029F 41$:      MOVL      SCT, R0                             ; 3047
                51     0117    C7   9A 002A3           MOVZBL    279(R7), R1                         ;
    00    0C    A0             51   E5 002A8           BBCC      R1, 12(R0), 42$                     ;
                         3C  A041   D4 002AD 42$:      CLRL      60(R0)[R1]                          ; 3048
                         0C    A0   D5 002B1           TSTL      12(R0)                              ; 3049
                               04   12 002B4           BNEQ      43$                                 ;
          04    A0             01   88 002B6           BISB2     #1, 4(R0)                           ;
                       00FC    C7   D4 002BA 43$:      CLRL      252(R7)                             ; 3050
                       0117    C7   94 002BE           CLRB      279(R7)                             ; 3051
          10    A7     0484    8F   AA 002C2           BICW2     #1156, 16(R7)                       ; 3054
```

```
                                            0F  11 002C8          BRB     46$                                      ; 2970
                          50        10      A7  9E 002CA 44$:     MOVAB   16(R7), R0                               ; 3060
              03          60                03  E1 002CE          BBC     #3, (R0), 45$                            ;
                          60                04  88 002D2          BISB2   #4, (R0)                                 ;
                          60        4B      8F  8A 002D5 45$:     BICB2   #75, (R0)                                ; 3064
                                            52  D5 002D9 46$:     TSTL    SRQ_TYPE                                 ; 3077
                                            13  13 002DB          BEQL    47$                                      ;
                                    28      AE  DD 002DD          PUSHL   CONDITION_VECTOR                         ; 3083
                                            52  DD 002E0          PUSHL   SRQ_TYPE                                 ; 3082
                                            57  DD 002E2          PUSHL   R7                                       ; 3081
                                    04      AC  DD 002E4          PUSHL   SMQ_N                                    ;
                                            02  DD 002E7          PUSHL   #2                                       ; 3079
                00000000G EF                05  FB 002E9          CALLS   #5, SCAN_INCOMPLETE_SERVICES             ;
              50 09800000 8F        04      AE  78 002F0 47$:     ASHL    REQUEST_RESPONSE, #159383552, R0         ; 3092
                                            0E  19 002F9          BLSS    49$                                      ;
                          01                6E  E8 002FB          BLBS    (SP), 48$                                ; 3095
                                                04 002FE          RET                                              ;
                                            59  DD 002FF 48$:     PUSHL   SJH_N                                    ;
                00000000G EF                01  FB 00301          CALLS   #1, REWRITE_RECORD                       ;
                                                04 00308          RET                                              ; 3094
                          03                6E  E8 00309 49$:     BLBS    (SP), 50$                                ; 3102
                                          00DE  31 0030C          BRW     61$                                      ;
                          50      00DC      C6  D0 0030F 50$:     MOVL    220(SJH), R0                             ; 3108
                                            07  13 00314          BEQL    51$                                      ;
                          0B                50  E9 00316          BLBC    R0, 52$                                  ; 3109
                          07        28      AE  E8 00319          BLBS    CONDITION_VECTOR, 52$                    ;
        00DC  C6          28        AE      0C  28 0031D 51$:     MOVC3   #12, CONDITION_VECTOR, 220(SJH)          ; 3114
                                    10      A6  95 00324 52$:     TSTB    16(SJH)                                  ; 3117
                                            18  18 00327          BGEQ    53$                                      ;
                                            56  DD 00329          PUSHL   SJH                                      ; 3120
                                            59  DD 0032B          PUSHL   SJH_N                                    ;
                00000000G EF                02  FB 0032D          CALLS   #2, UPDATE_GETQUI_DATA                   ;
                                            56  DD 00334          PUSHL   SJH                                      ; 3121
                                            59  DD 00336          PUSHL   SJH_N                                    ;
                00000000G EF                02  FB 00338          CALLS   #2, ENQUEUE_JOB                          ;
                                            76  11 0033F          BRB     55$                                      ; 3122
                          57        10      A6  E8 00341 53$:     BLBS    16(SJH), 54$                             ; 3128
                          54      00F0      C6  D0 00345          MOVL    240(SJH), SQR_N                          ; 3147
                                            54  DD 0034A          PUSHL   SQR_N                                    ;
                00000000G EF                01  FB 0034C          CALLS   #1, READ_RECORD                          ;
                          52                50  D0 00353          MOVL    R0, SQR                                  ;
                     00D8 C6        38      A2  C0 00356          ADDL2   56(SQR), 216(SJH)                        ; 3151
                                  00EC      C6  D4 0035C          CLRL    236(SJH)                                 ; 3152
                                  017B      C6  94 00360          CLRB    379(SJH)                                 ; 3153
                                  0178      C6  94 00364          CLRB    376(SJH)                                 ; 3154
                                  0180      C6  9F 00368          PUSHAB  384(SJH)                                 ; 3157
                                            20  DD 0036C          PUSHL   #32                                      ;
                00000000G EF                02  FB 0036E          CALLS   #2, DEALLOCATE_VARIABLE_DATA             ;
                          53      0179      C6  9E 00375          MOVAB   377(SJH), R3                             ; 3160
                                            63  96 0037A          INCB    (R3)                                     ;
                       44 A2                63  91 0037C          CMPB    (R3), 68(SQR)                            ; 3161
                                            59  1F 00380          BLSSU   59$                                      ;
                                            62  D5 00382          TSTL    (SQR)                                    ; 3164
                                            41  12 00384          BNEQ    57$                                      ;
                                  017C      C6  96 00386          INCB    380(SJH)                                 ; 3167
                     017A C6      017C      C6  91 0038A          CMPB    380(SJH), 378(SJH)                       ; 3168
                                            2D  1F 00391          BLSSU   56$                                      ;
```

```
                                         54  DD 00393         PUSHL   SQR_N                                 ; 3171
                  00000000G  EF          01  FB 00395         CALLS   #1, RELEASE_RECORD                    ;
                                         56  DD 0039C 54$:    PUSHL   SJH                                   ; 3172
                                         59  DD 0039E         PUSHL   SJH_N                                 ;
                  00000000G  EF          02  FB 003A0         CALLS   #2, UPDATE_GETQUI_DATA                ;
                                         7E  D4 003A7         CLRL    -(SP)                                 ; 3173
                             7E          56  7D 003A9         MOVQ    SJH, -(SP)                            ;
                                         59  DD 003AC         PUSHL   SJH_N                                 ;
                  00000000G  EF          04  FB 003AE         CALLS   #4, COMPLETE_JOB                      ;
                                         59  D4 003B5         CLRL    SJH_N                                 ; 3174
                                   48    A7  7C 003B7 55$:    CLRQ    72(R7)                                ; 3175
                                 0115    C7  94 003BA         CLRB    277(R7)                               ; 3177
                                         2D  11 003BE         BRB     61$                                   ; 3168
                             52    00F4  C6  D0 003C0 56$:    MOVL    244(SJH), SQR_N2                      ; 3185
                                         03  11 003C5         BRB     58$                                   ;
                             52          62  D0 003C7 57$:    MOVL    (SQR), SQR_N2                         ; 3199
                                         52  DD 003CA 58$:    PUSHL   SQR_N2                                ;
                  00000000G  EF          01  FB 003CC         CALLS   #1, READ_RECORD                       ;
                                         63  94 003D3         CLRB    (R3)                                  ; 3200
                                         50  DD 003D5         PUSHL   SQR_2                                 ; 3204
                                         52  DD 003D7         PUSHL   SQR_N2                                ;
                                         04  11 003D9         BRB     60$                                   ; 3203
                                         52  DD 003DB 59$:    PUSHL   SQR                                   ; 3212
                                         54  DD 003DD         PUSHL   SQR_N                                 ;
                                         56  DD 003DF 60$:    PUSHL   SJH                                   ; 3211
                                 0280    8F  BB 003E1         PUSHR   #^M<R7,R9>                            ; 3210
                                   04    AC  DD 003E5         PUSHL   SMQ_N                                 ;
                       F378  CF          06  FB 003E8         CALLS   #6, START_SYMBIONT_TASK               ;
                                         59  D5 003ED 61$:    TSTL    SJH_N                                 ; 3220
                                         09  13 003EF         BEQL    62$                                   ;
                                         59  DD 003F1         PUSHL   SJH_N                                 ;
                  00000000G  EF          01  FB 003F3         CALLS   #1, REWRITE_RECORD                    ;
                                 0115    C7  95 003FA 62$:    TSTB    277(R7)                               ; 3225
                                         1C  12 003FE         BNEQ    64$                                   ;
              0B         11  A7          01  E1 00400         BBC     #1, 17(R7), 63$                       ; 3227
                                         57  DD 00405         PUSHL   R7                                    ; 3229
                                   04    AC  DD 00407         PUSHL   SMQ_N                                 ;
                       FB7E  CF          02  FB 0040A         CALLS   #2, STOP_SYMBIONT_STREAM              ;
                                             04 0040F         RET                                           ;
                                         57  DD 00410 63$:    PUSHL   R7                                    ; 3231
                                   04    AC  DD 00412         PUSHL   SMQ_N                                 ;
                  00000000G  EF          02  FB 00415         CALLS   #2, FIND_PENDING_JOBS                 ;
                                             04 0041C 64$:    RET                                           ; 3232

; Routine Size:  1053 bytes,    Routine Base:  CODE + 09B5
```

```
1 GLOBAL ROUTINE SYMBIONT_SERVICE: NOVALUE=
1
1 !++
1 !
1 ! FUNCTIONAL DESCRIPTION:
1 !       This routine processes the message type:
1 !               MSG$_SMBINI             symbiont has completed assignment
1 !
1 ! INPUT PARAMETERS:
1 !       NONE
1 !
1 ! IMPLICIT INPUTS:
1 !       MBX             - Pointer to buffered mailbox message.
1 !
1 ! OUTPUT PARAMETERS:
1 !       NONE
1 !
1 ! IMPLICIT OUTPUTS:
1 !       NONE
1 !
1 ! ROUTINE VALUE:
1 !       NONE
1 !
1 ! SIDE EFFECTS:
1 !       NONE
1 !
1 !--
1
2 BEGIN
2 LOCAL
2       SCT:            REF BBLOCK;     ! Pointer to SCT
2
2
2 ! Validate the message structure level.
2 !
2 IF .MBX[SMBMSG$B_STRUCTURE_LEVEL] NEQ SMBMSG$K_STRUCTURE_LEVEL
2 OR .MBX[SMBMSG$B_STREAM_INDEX] GEQU SCT_K_MAXSTREAMS
2 THEN
3     BEGIN
3     SIGNAL(JBC$_INVMSG OR STS$K_ERROR);
3     RETURN;
2     END;
2
2
2 ! Search the symbiont control table for the PID of the process that sent the
2 ! message, which is in the second longword of the IOSB.  If found, locate the
2 ! queue corresponding to the stream identifier.
2 !
2 SCT = .SYMBIONT_CONTROL;
2 WHILE .SCT NEQ 0 DO
3     BEGIN
3     IF .SCT[SCT_L_PID] EQL .MBX[ACM$L_PROCID]
3     THEN
4         BEGIN
4         LOCAL
4             SMQ_N,                              ! Record number of SMQ
4             SMQ:            REF BBLOCK;     ! Pointer to SMQ
```

```
4
4
4                 ! Update SCT for a resetting stream.
4                 !
4                 IF .BITVECTOR[SCT[SCT_L_RESETTING], .MBX[SMBMSG$B_STREAM_INDEX]]
4                 THEN
5                     BEGIN
5                     BITVECTOR[SCT[SCT_L_RESETTING], .MBX[SMBMSG$B_STREAM_INDEX]] = FALSE;
5                     BITVECTOR[SCT[SCT_L_BITMAP], .MBX[SMBMSG$B_STREAM_INDEX]] = FALSE;
5                     IF .SCT[SCT_L_BITMAP] EQL 0 THEN SCT[SCT_V_DELETING] = TRUE;
5                     RETURN;
4                     END;
4
4
4                 ! Get the queue header corresponding to the stream index, and ensure
4                 ! that it is an active stream.
4                 !
4                 SMQ_N = .VECTOR[SCT[SCT_L_QUEUES], .MBX[SMBMSG$B_STREAM_INDEX]];
4                 IF .SMQ_N NEQ 0
4                 THEN
5                     BEGIN
5
5                     ! Read the queue header.
5                     !
5                     LOCK_QUEUE_FILE();
5                     SMQ = READ_RECORD(.SMQ_N);
5
5
5                     ! Ensure that the record is a queue header that is connected to this
5                     ! stream.  If it is, process the message.
5                     !
5                     IF .SMQ[SYM$B_TYPE] EQL SYM$K_SMQ
5                     AND .SMQ[SMQ$L_STREAM_SCT] EQLA .SCT
5                     AND .SMQ[SMQ$B_STREAM_INDEX] EQL .MBX[SMBMSG$B_STREAM_INDEX]
5                     THEN
6                         BEGIN
6                         PROCESS_SYMBIONT_MESSAGE(.SMQ_N, .SMQ, .SCT);
6                         REWRITE_RECORD(.SMQ_N);
5                         END;
5
5
5                     UNLOCK_QUEUE_FILE();
4                     END;
4                 RETURN;
3                 END;
3
3
3         SCT = .SCT[SCT_L_FLINK];
2         END;
2
2
2 ! The PID was not found in the symbiont control table.
2 !
2 SIGNAL(JBC$_INVMSG OR STS$K_ERROR);
1 END;
```

```
                                      001C 00000          .ENTRY  SYMBIONT_SERVICE, Save R2,R3,R4         ; 3233
                   54 00000000'   EF    9E 00002          MOVAB   MBX, R4                                 ;
                   50             64    D0 00009          MOVL    MBX, R0                                 ; 3268
                   01       02    A0    91 0000C          CMPB    2(R0), #1                               ;
                                  03    13 00010          BEQL    1$                                      ;
                                0081    31 00012          BRW     8$                                      ;
                   20       03    A0    91 00015 1$:      CMPB    3(R0), #32                              ; 3269
                                  7B    1E 00019          BGEQU   8$                                      ;
                   52       50    A4    D0 0001B          MOVL    SYMBIONT_CONTROL, SCT                   ; 3281
                                  75    13 0001F 2$:      BEQL    8$                                      ; 3282
                   50             64    D0 00021          MOVL    MBX, R0                                 ; 3284
              FC   A0       08    A2    D1 00024          CMPL    8(SCT), -4(R0)                          ;
                                  66    12 00029          BNEQ    7$                                      ;
                   50       03    A0    9A 0002B          MOVZBL  3(R0), R0                               ; 3294
   14         10   A2             50    E1 0002F          BBC     R0, 16(SCT), 5$                         ;
   00         10   A2             50    E5 00034          BBCC    R0, 16(SCT), 3$                         ; 3297
   00         0C   A2             50    E5 00039 3$:      BBCC    R0, 12(SCT), 4$                         ; 3298
                            0C    A2    D5 0003E 4$:      TSTL    12(SCT)                                 ; 3299
                                  60    12 00041          BNEQ    9$                                      ;
              04   A2             01    88 00043          BISB2   #1, 4(SCT)                              ;
                                        04 00047          RET                                             ; 3296
                   53       3C  A240    D0 00048 5$:      MOVL    60(SCT)[R0], SMQ_N                      ; 3307
                                  54    13 0004D          BEQL    9$                                      ; 3308
       00000000G   EF             00    FB 0004F          CALLS   #0, LOCK_QUEUE_FILE                     ; 3314
                                  53    DD 00056          PUSHL   SMQ_N                                   ; 3315
       00000000G   EF             01    FB 00058          CALLS   #1, READ_RECORD                         ;
                   06       04    A0    91 0005F          CMPB    4(SMQ), #6                              ; 3321
                                  24    12 00063          BNEQ    6$                                      ;
                   52     00FC    C0    D1 00065          CMPL    252(SMQ), SCT                           ; 3322
                                  1D    12 0006A          BNEQ    6$                                      ;
                   51             64    D0 0006C          MOVL    MBX, R1                                 ; 3323
              03   A1     0117    C0    91 0006F          CMPB    279(SMQ), 3(R1)                         ;
                                  12    12 00075          BNEQ    6$                                      ;
                                  05    BB 00077          PUSHR   #^M<R0,R2>                              ; 3326
                                  53    DD 00079          PUSHL   SMQ_N                                   ;
            FB63   CF             03    FB 0007B          CALLS   #3, PROCESS_SYMBIONT_MESSAGE            ;
                                  53    DD 00080          PUSHL   SMQ_N                                   ; 3327
       00000000G   EF             01    FB 00082          CALLS   #1, REWRITE_RECORD                      ;
       00000000G   EF             00    FB 00089 6$:      CALLS   #0, UNLOCK_QUEUE_FILE                   ; 3331
                                        04 00090          RET                                             ; 3286
                   52             62    D0 00091 7$:      MOVL    (SCT), SCT                              ; 3337
                                  89    11 00094          BRB     2$                                      ; 3282
                      00048422    8F    DD 00096 8$:      PUSHL   #295970                                 ; 3343
       00000000G   00             01    FB 0009C          CALLS   #1, LIB$SIGNAL                          ;
                                        04 000A3 9$:      RET                                             ; 3344

; Routine Size:  164 bytes,    Routine Base:  CODE + 0DD2
```

```
1 GLOBAL ROUTINE SYMBIONT_DELETION: NOVALUE=
1
1 !++
1 !
1 ! FUNCTIONAL DESCRIPTION:
1 !       This routine checks for and processes the deletion of a symbiont.
1 !
1 ! INPUT PARAMETERS:
1 !       NONE
1 !
1 ! IMPLICIT INPUTS:
1 !       NONE
1 !
1 ! OUTPUT PARAMETERS:
1 !       NONE
1 !
1 ! IMPLICIT OUTPUTS:
1 !       NONE
1 !
1 ! ROUTINE VALUE:
1 !       NONE
1 !
1 ! SIDE EFFECTS:
1 !       NONE
1 !
1 !--
1
2 BEGIN
2 LOCAL
2       PREV,                                   ! Pointer to predecessor of SCT
2       SCT:            REF BBLOCK,             ! Pointer to symbiont control table
2       SJH_N,                                  ! Record number of SJH
2       SJH:            REF BBLOCK,             ! Pointer to SJH
2       SMQ_N,                                  ! Record number of SMQ
2       SMQ:            REF BBLOCK;             ! Pointer to SMQ
2
2
2 PREV = SYMBIONT_CONTROL;
2 SCT = ..PREV;
2 WHILE .SCT NEQ 0 DO
3     BEGIN
3     IF .SCT[SCT_L_PID] EQL .MBX[ACM$L_PID]
3     THEN
4         BEGIN
4
4         ! If this process deletion is unexpected, do extra processing.
4         !
4         IF (.SCT[SCT_L_BITMAP] AND NOT .SCT[SCT_L_RESETTING]) NEQ 0
4         THEN
5             BEGIN
5
5             ! Signal a message.
5             !
5             SIGNAL(JBC$_SYMDEL + STS$K_WARNING, 0,
5                 (.MBX[ACM$L_FINALSTS] AND NOT STS$M_INHIB_MSG) );
5
5
```

```
5      ! Stop all queues being served by this symbiont.
5      !
5      INCR I FROM 0 TO 31 DO
6          BEGIN
6          SMQ_N = .VECTOR[SCT[SCT_L_QUEUES], .I];
6          IF .SMQ_N NEQ 0
6          THEN
7              BEGIN
7              SMQ = READ_RECORD(.SMQ_N);
7
7
7              ! If a request is pending, send a response.
7              !
7              IF .SMQ[SMQ$V_PAUSING]
7              OR .SMQ[SMQ$V_RESETTING]
7              OR .SMQ[SMQ$V_RESUMING]
7              OR .SMQ[SMQ$V_STARTING]
7              OR .SMQ[SMQ$V_STOPPING]
7              THEN
7                  SCAN_INCOMPLETE_SERVICES(
7                      ISRV_K_SYMBIONT,
7                      .SMQ_N, .SMQ,
7                      0,
7                      JBC$_SYMDEL + STS$K_ERROR);
7
7
7              ! Stop the queue.
7              !
7              SMQ[SMQ$L_STREAM_SCT] = 0;
7              SMQ[SMQ$L_STATUS] = 0;
7              SMQ[SMQ$V_STOPPED] = TRUE;
7
7
7              ! Rewrite the SMQ record.
7              !
7              REWRITE_RECORD(.SMQ_N);
6              END;
5          END;
5
5
5      ! Requeue current jobs on all queues being served by this symbiont.
5      !
5      INCR I FROM 0 TO 31 DO
6          BEGIN
6          SMQ_N = .VECTOR[SCT[SCT_L_QUEUES], .I];
6          IF .SMQ_N NEQ 0
6          THEN
7              BEGIN
7              SMQ = READ_RECORD(.SMQ_N);
7
7
7              ! Requeue the current job if there is one.
7              !
7              SJH_N = .SMQ[SMQ$L_CURRENT_LIST];
7              IF .SJH_N NEQ 0
7              THEN
8                  BEGIN
```

```
; 2433          3459  8                              SJH = READ_RECORD(.SJH_N);
; 2434          3460  8                              SJH[SJH$V_SYSTEM_FAILURE] = TRUE;
; 2435          3461  8                              UPDATE_GETQUI_DATA(.SJH_N, .SJH);
; 2436          3462  8                              COMPLETE_JOB(
; 2437          3463  8                                  .SJH_N, .SJH, .SMQ,
; 2438          3464  8                                  0,
; 2439          3465  8                                  JBC$_SYMDEL OR STS$K_ERROR);
; 2440          3466  8                              SMQ[SMQ$L_CURRENT_LIST] = 0;
; 2441          3467  8                              SMQ[SMQ$L_CURRENT_LIST_END] = 0;
; 2442          3468  8                              SMQ[SMQ$B_CURRENT_JOB_COUNT] = 0;
; 2443          3469  7                              END;
; 2444          3470  7
; 2445          3471  7
; 2446          3472  7                          ! Rewrite the SMQ record.
; 2447          3473  7                          !
; 2448          3474  7                          REWRITE_RECORD(.SMQ_N);
; 2449          3475  6                          END;
; 2450          3476  5                      END;
; 2451          3477  4                  END;
; 2452          3478  4
; 2453          3479  4
; 2454          3480  4              ! Deassign the channel to the symbiont mailbox if one has been
; 2455          3481  4              ! assigned.
; 2456          3482  4              !
; 2457          3483  4              IF .SCT[SCT_W_MAILBOX] NEQ 0
; 2458          3484  4              THEN
; 2459          3485  4                  $DASSGN(CHAN=.SCT[SCT_W_MAILBOX]);
; 2460          3486  4
; 2461          3487  4
; 2462          3488  4              ! Finally, release the SCT entry.
; 2463          3489  4              !
; 2464          3490  4              .PREV = .SCT[SCT_L_FLINK];
; 2465          3491  4              DEALLOCATE_MEMORY(.SCT);
; 2466          3492  4              QUEUE_REFERENCE_COUNT = .QUEUE_REFERENCE_COUNT - 1;
; 2467          3493  4              EXITLOOP;
; 2468          3494  3              END;
; 2469          3495  3
; 2470          3496  3
; 2471          3497  3          ! Advance to next.
; 2472          3498  3          !
; 2473          3499  3          PREV = .SCT;
; 2474          3500  3          SCT = ..PREV;
; 2475          3501  2          END;
; 2476          3502  1  END;



                                  0FFC 00000           .ENTRY  SYMBIONT_DELETION, Save R2,R3,R4,R5,R6,R7,-  ; 3345
                                                               R8,R9,R10,R11                                  ;
             5B 00000000G   EF   9E 00002           MOVAB   READ_RECORD, R11                               ;
             5A 00000000'   EF   9E 00009           MOVAB   SYMBIONT_CONTROL, PREV                         ; 3382
             53             6A   D0 00010 1$:       MOVL    (PREV), SCT                                    ; 3383
                            01   12 00013           BNEQ    2$                                             ; 3384
                                 04 00015           RET                                                    ;
             50 00000000'   EF   D0 00016 2$:       MOVL    MBX, R0                                        ; 3386
```

```
                  28   A0          08   A3  D1 0001D          CMPL    8(SCT), 40(R0)                                       :
                                        03  13 00022          BEQL    3$                                                   :
                                      00F7  31 00024          BRW     14$                                                  :
                       51          10   A3  D2 00027  3$:     MCOML   16(SCT), R1                                          : 3392
                       51          0C   A3  D3 0002B          BITL    12(SCT), R1                                          :
                                        03  12 0002F          BNEQ    4$                                                   :
                                      00C7  31 00031          BRW     13$                                                  :
           7E     4C   A0 10000000      8F  CB 00034  4$:     BICL3   #268435456, 76(R0), -(SP)                            : 3399
                                        7E  D4 0003D          CLRL    -(SP)                                                : 3398
                          00048468      8F  DD 0003F          PUSHL   #296040                                              :
              00000000G  00             03  FB 00045          CALLS   #3, LIB$SIGNAL                                       :
                       57          3C   A3  9E 0004C          MOVAB   60(SCT), R7                                          : 3406
                                        54  D4 00050          CLRL    I                                                    :
                       56             6744  D0 00052  5$:     MOVL    (R7)[I], SMQ_N                                       :
                                        48  13 00056          BEQL    8$                                                   : 3407
                                        56  DD 00058          PUSHL   SMQ_N                                                : 3410
                       6B               01  FB 0005A          CALLS   #1, READ_RECORD                                      :
                       55               50  D0 0005D          MOVL    R0, SMQ                                              :
                       52          10   A5  9E 00060          MOVAB   16(SMQ), R2                                          : 3415
           10          62               03  E0 00064          BBS     #3, (R2), 6$                                         :
           0C          62               05  E0 00068          BBS     #5, (R2), 6$                                         : 3416
           08          62               06  E0 0006C          BBS     #6, (R2), 6$                                         : 3417
                       04          01   A2  E8 00070          BLBS    1(R2), 6$                                            : 3418
           15          62               0A  E1 00074          BBC     #10, (R2), 7$                                        : 3419
                          0004846A      8F  DD 00078  6$:     PUSHL   #296042                                              : 3425
                                        7E  D4 0007E          CLRL    -(SP)                                                : 3421
                                        55  DD 00080          PUSHL   SMQ                                                  : 3423
                                        56  DD 00082          PUSHL   SMQ_N                                                :
                                        02  DD 00084          PUSHL   #2                                                   : 3421
              00000000G  EF             05  FB 00086          CALLS   #5, SCAN_INCOMPLETE_SERVICES                         :
                                  00FC  C5  D4 0008D  7$:     CLRL    252(SMQ)                                             : 3430
                                        62  D4 00091          CLRL    (R2)                                                 : 3431
                  01   A2               02  88 00093          BISB2   #2, 1(R2)                                            : 3432
                                        56  DD 00097          PUSHL   SMQ_N                                                : 3437
              00000000G  EF             01  FB 00099          CALLS   #1, REWRITE_RECORD                                   :
           AE          54               1F  F3 000A0  8$:     AOBLEQ  #31, I, 5$                                           : 3404
                                        54  D4 000A4          CLRL    I                                                    : 3444
                       56             6744  D0 000A6  9$:     MOVL    (R7)[I], SMQ_N                                       : 3446
                                        4B  13 000AA          BEQL    11$                                                  : 3447
                                        56  DD 000AC          PUSHL   SMQ_N                                                : 3450
                       6B               01  FB 000AE          CALLS   #1, READ_RECORD                                      :
                       55               50  D0 000B1          MOVL    R0, SMQ                                              :
                       59          48   A5  D0 000B4          MOVL    72(SMQ), SJH_N                                       : 3455
                                        34  13 000B8          BEQL    10$                                                  : 3456
                                        59  DD 000BA          PUSHL   SJH_N                                                : 3459
                       6B               01  FB 000BC          CALLS   #1, READ_RECORD                                      :
                       58               50  D0 000BF          MOVL    R0, SJH                                              :
                  11   A8          40   8F  88 000C2          BISB2   #64, 17(SJH)                                         : 3460
                                        58  DD 000C7          PUSHL   SJH                                                  : 3461
                                        59  DD 000C9          PUSHL   SJH_N                                                :
              00000000G  EF             02  FB 000CB          CALLS   #2, UPDATE_GETQUI_DATA                               :
                          0004846A      8F  DD 000D2          PUSHL   #296042                                              : 3465
                                        7E  D4 000D8          CLRL    -(SP)                                                : 3462
                                        55  DD 000DA          PUSHL   SMQ                                                  : 3463
                                        58  DD 000DC          PUSHL   SJH                                                  :
                                        59  DD 000DE          PUSHL   SJH_N                                                :
              00000000G  EF             05  FB 000E0          CALLS   #5, COMPLETE_JOB                                     :
```

```
                         48   A5  7C 000E7            CLRQ    72(SMQ)                                  ; 3466
                       0115   C5  94 000EA            CLRB    277(SMQ)                                 ; 3468
                              56  DD 000EE 10$:       PUSHL   SMQ_N                                    ; 3474
          00000000G   EF      01  FB 000F0            CALLS   #1, REWRITE_RECORD                       ;
       AB             54      1F  F3 000F7 11$:       AOBLEQ  #31, I, 9$                               ; 3444
                         06   A3  B5 000FB 12$:       TSTW    6(SCT)                                   ; 3483
                              0B  13 000FE            BEQL    13$                                      ;
                      7E   06 A3  3C 00100            MOVZWL  6(SCT), -(SP)                            ; 3485
          00000000G   00      01  FB 00104            CALLS   #1, SYS$DASSGN                           ;
                      6A      63  D0 0010B 13$:       MOVL    (SCT), (PREV)                            ; 3490
                              53  DD 0010E            PUSHL   SCT                                      ; 3491
          00000000G   EF      01  FB 00110            CALLS   #1, DEALLOCATE_MEMORY                    ;
                 00000000'    EF  D7 00117            DECL    QUEUE_REFERENCE_COUNT                    ; 3492
                                  04 0011D            RET                                              ; 3388
                      5A      53  D0 0011E 14$:       MOVL    SCT, PREV                                ; 3499
                            FEEC  31 00121            BRW     1$                                       ; 3500
                                  04 00124            RET                                              ; 3502

; Routine Size:  293 bytes,    Routine Base:  CODE + 0E76
; 2478            3503  1 GLOBAL ROUTINE DELETE_SYMBIONTS: NOVALUE=
; 2479            3504  1
; 2480            3505  1 !++
; 2481            3506  1 !
; 2482            3507  1 ! FUNCTIONAL DESCRIPTION:
; 2483            3508  1 !       This routine deletes all symbiont processes just before the job
; 2484            3509  1 !       controller restarts itself after a fatal error.
; 2485            3510  1 !
; 2486            3511  1 ! INPUT PARAMETERS:
; 2487            3512  1 !       NONE
; 2488            3513  1 !
; 2489            3514  1 ! IMPLICIT INPUTS:
; 2490            3515  1 !       NONE
; 2491            3516  1 !
; 2492            3517  1 ! OUTPUT PARAMETERS:
; 2493            3518  1 !       NONE
; 2494            3519  1 !
; 2495            3520  1 ! IMPLICIT OUTPUTS:
; 2496            3521  1 !       NONE
; 2497            3522  1 !
; 2498            3523  1 ! ROUTINE VALUE:
; 2499            3524  1 !       NONE
; 2500            3525  1 !
; 2501            3526  1 ! SIDE EFFECTS:
; 2502            3527  1 !       NONE
; 2503            3528  1 !
; 2504            3529  1 !--
; 2505            3530  1
; 2506            3531  2 BEGIN
; 2507            3532  2 LOCAL
; 2508            3533  2       SCT:            REF BBLOCK;     ! Pointer to symbiont control table
; 2509            3534  2
; 2510            3535  2
; 2511            3536  2 SCT = .SYMBIONT_CONTROL;
; 2512            3537  2 WHILE .SCT NEQ 0 DO
; 2513            3538  3     BEGIN
; 2514            3539  3     $DELPRC(PIDADR=SCT[SCT_L_PID]);
; 2515            3540  3     SCT = .SCT[SCT_L_FLINK];
; 2516            3541  2     END;
; 2517            3542  1 END;


                                                                 .EXTRN  SYS$DELPRC

                                         0004 00000              .ENTRY  DELETE_SYMBIONTS, Save R2                          ; 3503
                   52 00000000'  EF   D0 00002              MOVL    SYMBIONT_CONTROL, SCT                              ; 3536
                                 11   13 00009 1$:          BEQL    2$                                                 ; 3537
                                 7E   D4 0000B              CLRL    -(SP)                                              ; 3539
                          08     A2   9F 0000D              PUSHAB  8(SCT)                                             ;
          00000000G  00          02   FB 00010              CALLS   #2, SYS$DELPRC                                     ;
                     52          62   D0 00017              MOVL    (SCT), SCT                                         ; 3540
                                 ED   11 0001A              BRB     1$                                                 ; 3537
                                      04 0001C 2$:          RET                                                        ; 3542

; Routine Size:  29 bytes,    Routine Base:  CODE + 0F9B
```

```
1 GLOBAL ROUTINE SYMBIONT_COMPLETED_BLOCKS(SJH)=
1
1 !++
1 !
1 ! FUNCTIONAL DESCRIPTION:
1 !       This routine analyzes the checkpoint entry for a job and returns the
1 !       number of completed blocks in the current file.
1 !
1 ! INPUT PARAMETERS:
1 !       SJH             - Pointer to SJH.
1 !
1 ! IMPLICIT INPUTS:
1 !       NONE
1 !
1 ! OUTPUT PARAMETERS:
1 !       NONE
1 !
1 ! IMPLICIT OUTPUTS:
1 !       NONE
1 !
1 ! ROUTINE VALUE:
1 !       Number of completed blocks, or 0 if indeterminate.
1 !
1 ! SIDE EFFECTS:
1 !       NONE
1 !
1 !--
1
2 BEGIN
2 MAP
2       SJH:            REF BBLOCK;     ! Pointer to SJH
2
2
2 ! If the checkpoint is short enough to fit into the main area, and the
2 ! structure level is correct, then return the first longword of the user
2 ! key, which is known to be the current VBN.
2 !
2 IF .BBLOCK[SJH[SJH$T_CHECKPOINT], FVDF_LENGTH] LEQU SJH$S_CHECKPOINT-2
2 THEN
3     BEGIN
3     BIND
3       CKP = BBLOCK[SJH[SJH$T_CHECKPOINT], FVDF_DATA] : BBLOCK;
3
3
3     IF .CKP[SMBMSG$B_CHECKPOINT_LEVEL] EQL SMBMSG$K_STRUCTURE_LEVEL
3     THEN
3       RETURN .(CKP[SMBMSG$Q_USER_KEY]);
2     END;
2
2
2 ! Unknown checkpoint, or none stored -- return 0.
2 !
2 0
1 END;
```

```
                                    0000 00000           .ENTRY  SYMBIONT_COMPLETED_BLOCKS, Save nothing       ; 3543
              50        04    AC  D0 00002           MOVL    SJH, R0                                         ; 3580
              1E      0180    C0  B1 00006           CMPW    384(R0), #30                                    ;
                              10  1A 0000B           BGTRU   1$                                              ;
              50      0182    C0  9E 0000D           MOVAB   386(R0), R0                                     ; 3584
              01        01    A0  91 00012           CMPB    1(R0), #1                                       ; 3587
                              05  12 00016           BNEQ    1$                                              ;
              50        10    A0  D0 00018           MOVL    16(R0), R0                                      ; 3589
                                  04 0001C           RET                                                     ;
                              50  D4 0001D 1$:       CLRL    R0                                              ; 3596
                                  04 0001F           RET                                                     ;

; Routine Size:  32 bytes,    Routine Base:  CODE + 0FB8
; 2574          3597  1 END
; 2575          3598  0 ELUDOM



                                                                        .EXTRN  LIB$SIGNAL

;                                       PSECT SUMMARY
;
;       Name                        Bytes                         Attributes
;
;   COMMON                              5024  NOVEC,  WRT,  RD ,NOEXE,NOSHR,  LCL,  REL,  OVR,NOPIC,ALIGN(2)
;   CODE                                4056  NOVEC,NOWRT,  RD ,  EXE,NOSHR,  LCL,  REL,  CON,NOPIC,ALIGN(2)



;                               Library Statistics
;
;                                               -------- Symbols --------       Pages       Processing
;       File                                    Total    Loaded   Percent      Mapped      Time
;
;   _$255$DUA28:[SYSLIB]LIB.L32;1               18619       178         0      1000          00:01.4




;                                       COMMAND QUALIFIERS

;       BLISS/CHECK=(FIELD,INITIAL,OPTIMIZE)/LIS=LIS$:SYMBIONT/OBJ=OBJ$:SYMBIONT MSRC$:SYMBIONT/UPDATE=(ENH$:SYMBIONT)

; Size:          3966 code + 5114 data bytes
; Run Time:         01:06.5
; Elapsed Time:     04:11.7
; Lines/CPU Min:      3245
; Lexemes/CPU-Min: 35206
; Memory Used:  653 pages
; Compilation Complete
```

0195 AH-BT13A-SE
VAX/VMS V4.0

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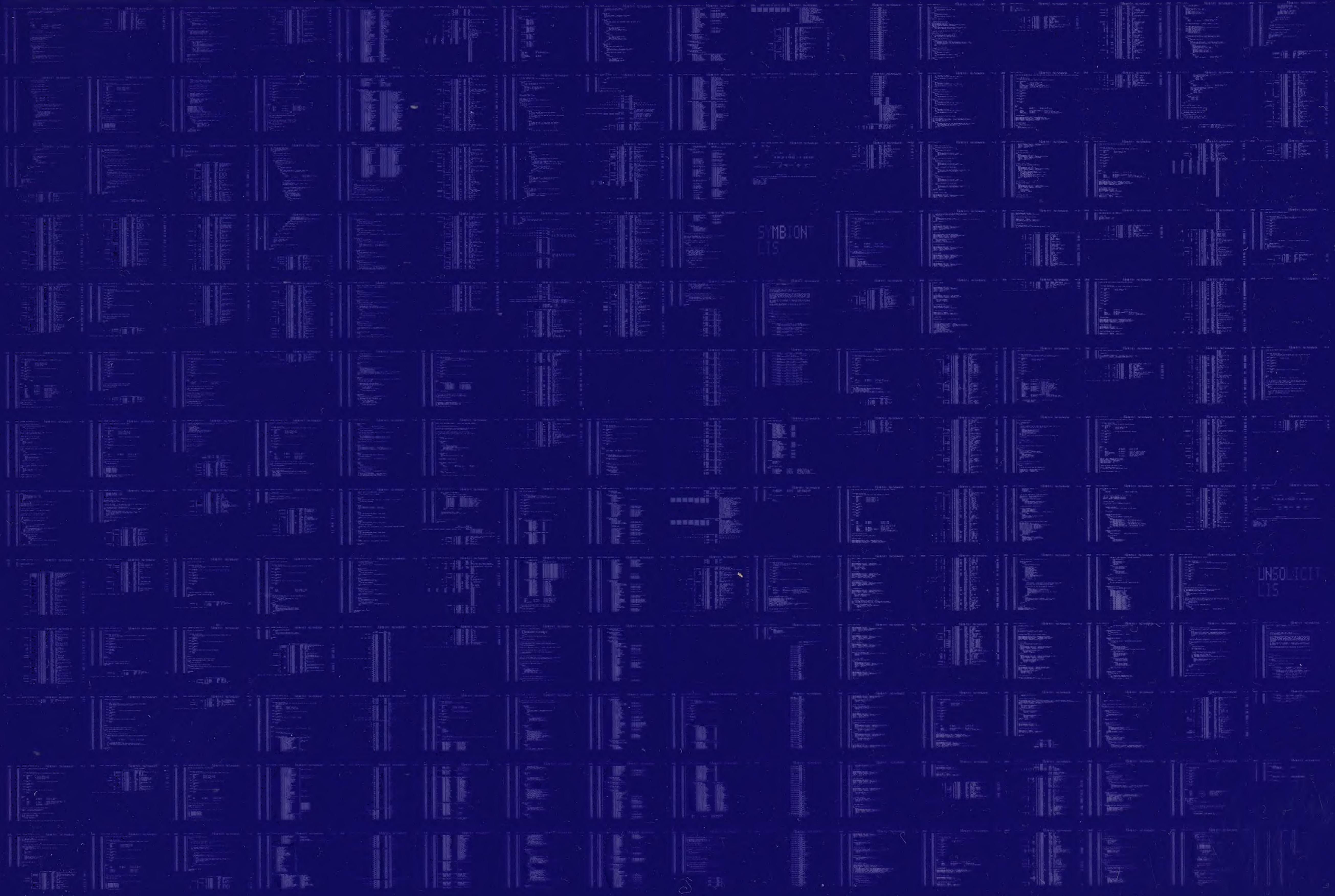
SYMBIONT
LIS

UNSOLICIT
LIS